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Forest Composition of Maine:

An Analysis Using Number of Trees

Douglas S. Powell

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Abstract

Number-of-trees data compiled by the USDA Forest Service from three periodic statewide inventories of Maine's forest resources are used to analyze the composition of the state's timberland in terms of species, tree class, and size. Conditions are compared and contrasted for periods from 1959 to 1971 to 1982 across different regions and counties of the state. Twenty-three statistical tables containing 1982 estimates of number of trees, trees per acre, and average diameter are presented.

Cover Photos (clockwise, from left)

Forester on the field staff of Forest Inventory and Analysis unit measuring the diameter of a tree on a sample plot in Hancock County, foresters observing the dense stocking of spruce and fir regeneration on cutover land in Piscataquis County, and a cow moose (*Alces americana*) exploring a forested stream in Aroostook County.

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Introduction

In an effort to assess the extent and condition of Maine's forest resources, the USDA Forest Service began collecting data in the late 1940's in Hancock County in what was the beginning of statewide forest inventories in the northeastern United States. That first survey of Maine's woods was concluded in 1959, and the results were published by Ferguson and Longwood (1960).

Since then two more surveys have been conducted in Maine: the 1971 inventory (Ferguson and Kingsley 1972) and the 1982 inventory (Powell and Dickson 1984). With each subsequent survey, the demands for more and varied resource data to satisfy current needs have led to more complicated inventories and increased tabular output from the computer. Emphasis has shifted between these inventories, as have the geographic sampling units, standards, definitions, plot designs, and processing calculations and techniques.

But amid this evolving effort to conduct state-of-the-art inventories that respond to the needs of Congress and the people of Maine, one survey item has remained a basic component: number of trees. It is generally staightforward to estimate, reliable, objective, and comparable with past estimates. In spite of its simplicity, number of trees can be presented in numerous contexts that, taken together, allow one to appreciate more fully the composition of the forests of Maine.

The data in this report, then, center on number of trees. These data are estimates, and do have associated sampling errors. The estimates are taken from the timberland base, and do not include trees on nonforest or noncommercial forest land. Still I will be discussing about 90 percent of the tree resource in the state and 97 percent of the forest resource. Besides statewide data, comparisons are made between the nine geographic sampling units used in the 1982 forest survey (Fig. 1). Although most of the analysis focuses on the third and most recent inventory, I discuss, where comparisons are valid, trends in forest composition that have occurred during the period between inventories.

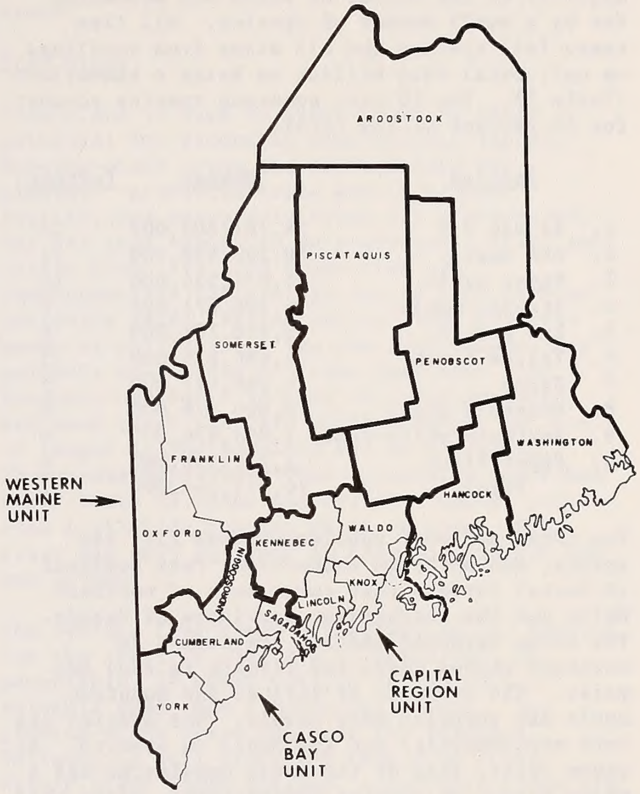


Figure 1.--Nine geographic sampling units in the 1982 Maine forest survey.

From the many approaches that one could take to evaluate forest composition, I have selected three that are useful in characterizing different aspects of Maine's woods: species composition, tree class, and size.

Species Composition

Maine has 17 million acres of timberland--a land use that occupies 86 percent of the land area of the state. Such a sizeable resource is populated with a variety of tree species. On the 2,099 new field plots established on timberland during the 1982 survey, we encountered 47 different tree species (see list in appendix). Although this is 53 species short of the total number reported by the state (Maine Forestry Department 1973), they included many exotic or uncommon species that would occur very rarely in natural forest conditions as well as many small trees that we consider shrubs. Of the 47 we tallied, 39 are commercially important to forest industries. Softwood or coniferous species number 12 while hardwood or broadleaved species are more numerous with 35. As shown later, this is nearly the only criterion in which hardwoods outnumber softwoods in Maine.

Since it is rather cumbersome to discuss all of these species as they relate to forest composition, we will concentrate on those species that predominate. Fortunately the vast majority of the number of trees are accounted for by a small number of species. All live trees (all species and all sizes from seedlings on up), total 94.4 billion on Maine's timberland (Table 1). The 10 most numerous species account for 82 percent of the total:

	Species	Number	Percent
1.	Balsam fir	24,781,403,000	26
2.	Red maple	10,206,688,000	11
3.	Sugar maple	8,928,536,000	10
4.	Striped maple	6,390,671,000	7
5.	Red spruce	5,958,107,000	6
6.	Yellow birch	4,686,610,000	5
7.	Beech	4,386,617,000	5
8.	Mountain maple	4,009,876,000	4
9.	Northern white-cedar	3,853,436,000	4
10.	Paper birch	3,771,298,000	4
	Total	76,973,242,000	82

The three softwood species--balsam fir, red spruce, and northern white-cedar--are dominant in boreal forests that cover much of northern Maine and the surrounding provinces of Canada. The seven hardwood species are common in northern states where the climate is cool and moist. The presence of striped and mountain maple may surprise many people. The species are both noncommercial and are small in stature. As shown later, size of the trees considered has a major affect on species composition. Since this list includes seedlings, which in terms of numbers of trees is overwhelming, it is understandable why these two prolific understory species are ranked so high.

In order to compare species composition for all three forest inventories of Maine, we need to consider growing stock trees 5.0 inches diameter at breast height (dbh) and larger. Also, because of the way in which the data were processed, we cannot always work with individual species and must use species groups: spruce includes red, white, and black spruce, and aspen includes quaking and bigtooth aspen plus balsam poplar. In percentage terms, here are the top 10 for each survey:

Balsam fir and spruce dominate all three surveys. The other species pale in comparison. These species reached their peak influence in 1971 with 55 percent, and reached their lowest point in 1982 with 47 percent. This is due to the significant decline caused by high rates of mortality and harvesting in balsam fir between 1971 and 1982 (Powell 1985).

No species maintained its ranking across all three inventories. (Where species tied on a percentage basis, the one(s) with more trees was(were) ranked higher). Although the shifts in ranking may be subtle in some cases, these changes in composition demonstrate the dynamics and flux of Maine's forest resource.

The changes are the result of natural and man-caused factors working to varying degrees with one another. For instance, red maple is showing slow but steady progress, moving from 7 to 9 percent. As in other states in the Northeast (Powell and Considine 1982, Considine 1984), this species is coming on strong. It grows on a wide variety of sites, sprouts well, has frequent and abundant seed crops, is rarely troubled by forest pests, and is an aggressive competitor. Where other species drop out of stands due to disease, insect attack, suppression, or harvesting, red maple seems to capitalize on these vacancies and fills in the stands.

Another example is beech, which has slowly dropped out of the top 10. As a long-lived shade tolerant species that is an important component of the climax-tending forest type of sugar maple-beech-yellow birch (Berglund 1980), one might expect that as Maine's forests mature, beech would increase its share of the resource. But beech is losing ground in Maine, and it seems that the major cause is beech bark disease. This destructive malady is actually a one-two punch. The damage results from the sequence of beech scale insect (Cryptococcus fagi) infestation followed by infection with the bark fungus Nectria coccinea var. faginata (Hepting 1971). This introduced disease has been in Maine some 50 years, and it is sometimes difficult to find a beech tree that has not been affected. In the 1982 inventory, 65 percent of the beech growing-stock trees (5.0+ inches

	1959		1971		1982	
1.	balsam fir	28%	balsam fir	31%	spruce	24%
2.	spruce	22%	spruce	24%	balsam fir	23%
3.	northern white-cedar	10%	red maple	8%	red maple	9%
4.	red maple	7%	northern white-cedar	7%	northern white-cedar	8%
5.	paper birch	5%	hemlock	5%	paper birch	6%
6.	hemlock	5%	paper birch	4%	aspen	5%
7.	white pine	4%	sugar maple	4%	hemlock	5%
8.	aspen	4%	white pine	4%	white pine	4%
9.	beech	4%	aspen	3%	sugar maple	4%
10.	yellow birch	3%	beech	3%	yellow birch	3%

dbh) were afflicted by the scale insect and 58 percent showed evidence of the nectria fungus. The percentage of trees with both present simultaneously would be even higher. Some surveys have estimated that one-quarter of Maine's beech trees have succumbed to this disease (Orr and Brown 1978).

Figure 2 shows by county where each of the top 10 growing-stock species (5.0+ inches dbh) are concentrated in Maine. Since red spruce has been isolated (1982 data) it occupies the number two position after balsam fir. Each map shows the distribution of a species across Maine in terms of four categories of trees per acre. The ranges of each category vary for each species in order to highlight each species distribution. The state average is provided to give a reference point for comparison.

These maps can be used in many ways. For instance, if someone were interested in starting a maple syrup business or in finding spectacular fall foliage, Franklin, Somerset, and Aroostook Counties would be obvious areas to investigate (Fig. 2I). A white pine lumber manufacturer would be drawn to southwestern Maine (Fig. 2H), while someone supplying a cedar log cabin mill would go in the opposite direction (Fig. 2D). A wildlife photographer seeking to capture the marten (Martes americana) on film would head for northern and western Maine where spruce and fir are most common.

Individuals seeking the distinctive paper birch, either for esthetic enjoyment or for turning the wood into any number of specialty products, from golf tees to tongue depressors, would best concentrate their efforts in western Maine, especially Franklin County (Figure 2E).

A common distinction in forestry is made between softwood and hardwood species. While such a distinction is broad, it often provides a useful purpose in describing the timber resource or wildlife habitat in general terms. Maine is unique as a northeastern state in many respects, one of which is that it is dominated by softwood trees. Geographic location accounts for Maine's large boreal component of spruce, balsam fir, and northern white-cedar as well as such cooler climate species as hemlock and white pine. In 1982, 65 percent of the growing-stock resource was softwood, and northern and eastern Maine were the areas where softwoods were most prevalent (Fig. 3).

While such dominance is impressive, it pales somewhat in comparison to the situation in the preceding survey. In 1971, the softwood percentage was 72 and all nine geographic sampling units were dominated with needle-leaved trees. By 1982, all units had a lower proportion of softwoods. The two units showing the most change actually moved to a hardwood-dominated condition: Casco Bay went from 57 percent softwood to 44 percent and the Capital Region went from 56 percent to 46 percent. It is difficult to assign a cause for these changes, but perhaps a combination of forest succession, harvesting practices, and insect (especially spruce budworm) damage is the cause.

Tree Class

Tree class is used to group trees by their potential for producing high-quality lumber. Growing-stock trees are divided into two classes: preferred trees are of highest quality, and acceptable trees are merchantable but not good enough to be preferred. Rough and rotten trees are live trees that are unmerchantable for sawlogs due to poor form or excessive decay, respectively. They are also known as cull trees. The two dead classes are salvable dead trees or trees that have died recently and could be used for wood products, and dead trees that are still standing but are no longer of any possible use as a product. This nonsalvable dead class generally describes trees known as snags and serves a useful purpose from a wildlife habitat point of view. Tree class was only assigned to trees 5.0 inches dbh and larger.

The average tree-class percentage of all species for the state in 1982 was 19 preferred, 53 acceptable, 10 rough cull, 6 rotten cull, 5 salvable dead, and 7 nonsalvable dead. The growing-stock trees dominate the resource, followed by cull trees and then dead trees. Within these broad classes, acceptable trees are more common than preferred trees, rough culls are more common than rotten culls, and nonsalvable dead trees are more common than salvable dead trees. The preferred category represents the elite in sawlog potential trees. It is natural to expect that they would make up a minority of the growing-stock resource. Trees are classed as rough cull when they are too deformed due to excessive branching, taper, sweep, or crook to yield a merchantable sawlog. If the tree is only a poletimber tree at the time of the inventory, then its condition when it reaches sawtimber size is projected, and if it is determined that the tree will not then yield a merchantable sawlog because of poor form, it is classified as a rough cull. Growing conditions and species composition in Maine have resulted in more rough culls than rotten ones. In the dead tree categories, the nonsalvable trees are more prevalent in stands because they can remain standing for several years, while the salvable dead trees remain in their condition only briefly before becoming totally unmerchantable. These relative positions of the tree classes generally hold true for the different species and the different geographical areas of Maine, but the actual percentage distributions vary.

The top 10 species groups for all trees 5.0 inches dbh and larger account for 85 percent of the total for all species (Table 11). When we compute the tree class percentage for these

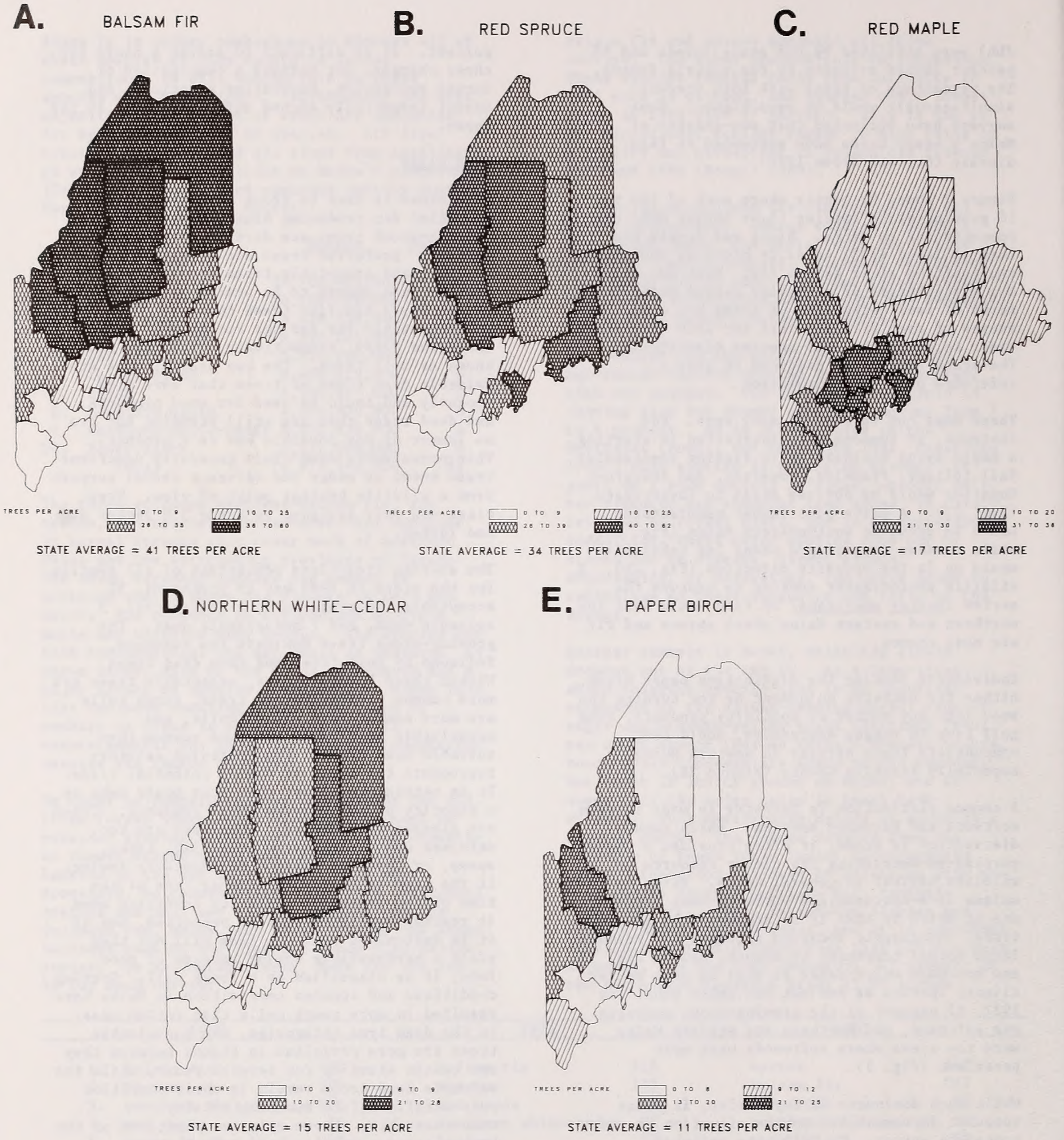
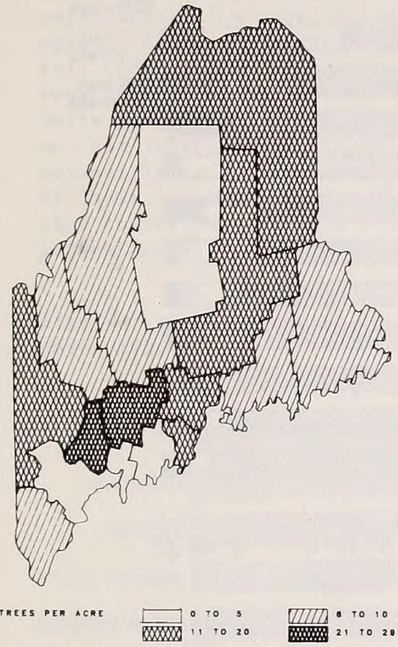


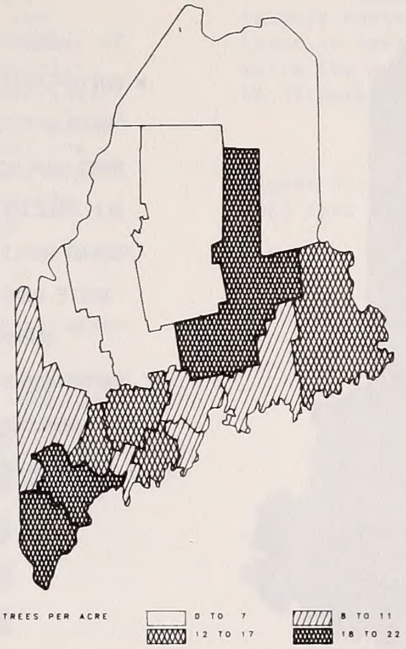
Figure 2.--Number of trees per acre for each of the top 10 growing-stock species by county, 1982.

F. ASPEN



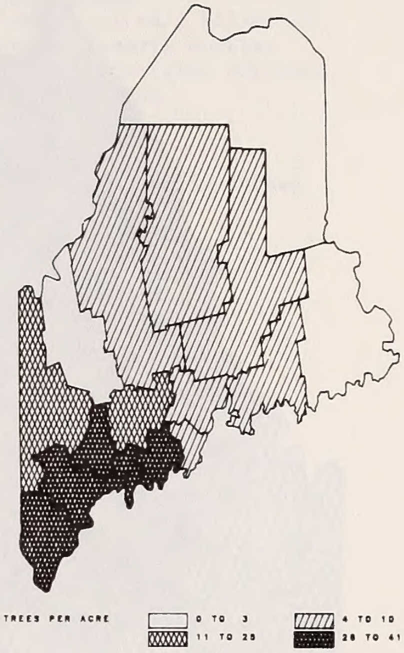
STATE AVERAGE = 9 TREES PER ACRE

G. HEMLOCK



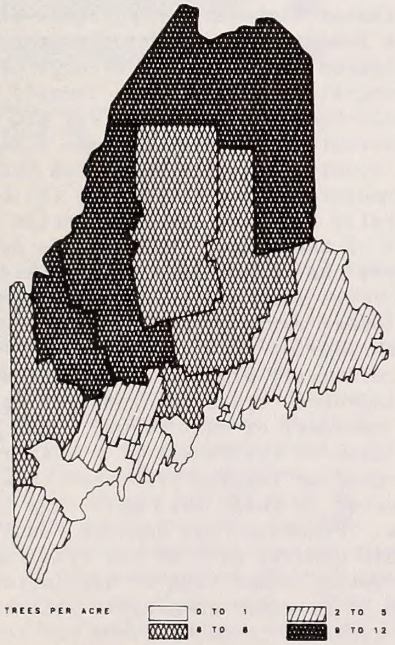
STATE AVERAGE = 9 TREES PER ACRE

H. WHITE PINE



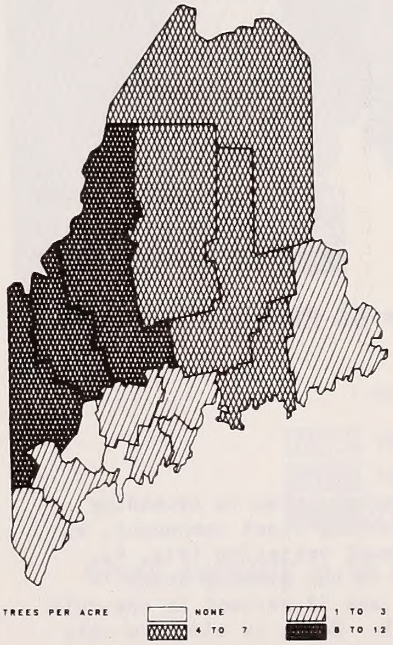
STATE AVERAGE = 7 TREES PER ACRE

I. SUGAR MAPLE



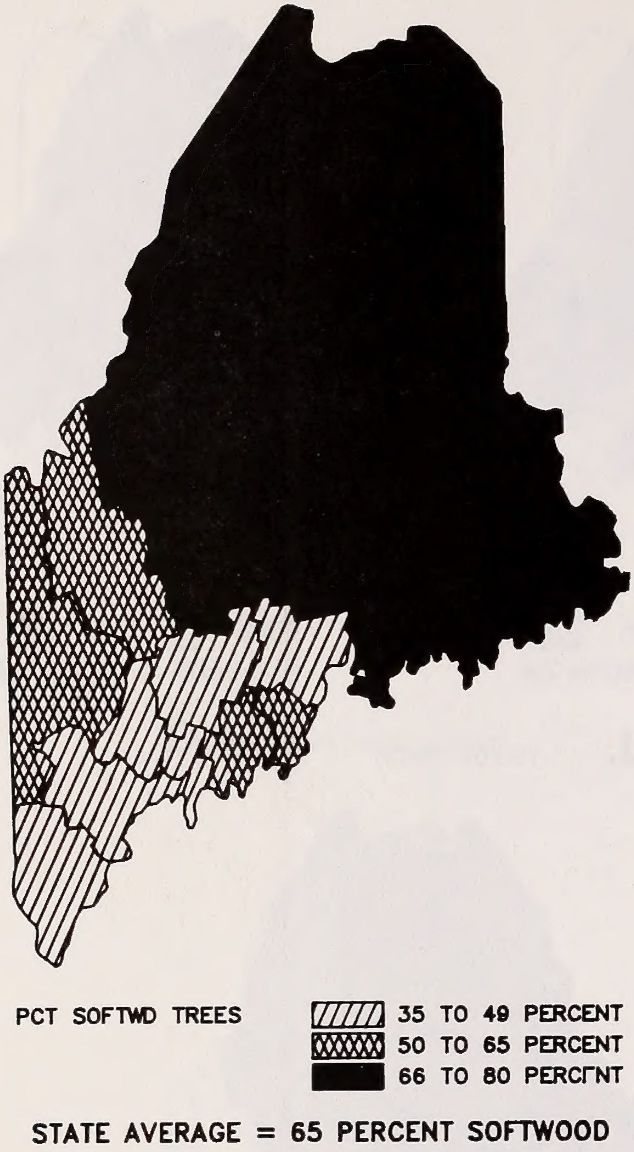
STATE AVERAGE = 7 TREES PER ACRE

J. YELLOW BIRCH



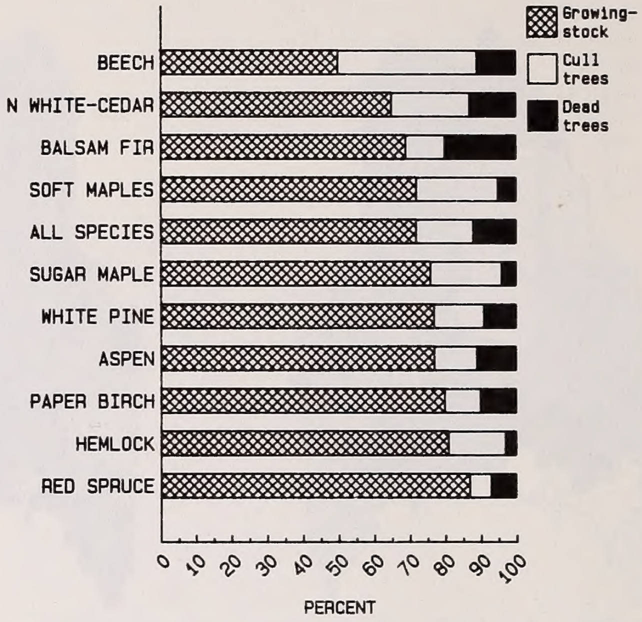
STATE AVERAGE = 6 TREES PER ACRE

Figure 3.--Percentage of growing-stock trees (5+ inches dbh) that are softwood, 1982.



species groups and arrange them in ascending order based on the growing-stock component, we can see some significant variation (Fig. 4). Beech has 50 percent in the growing-stock classes (the lowest) and 39 percent in the cull classes (the highest). Beech is also the only species that has more rotten cull trees than rough cull trees. At the opposite extreme, red spruce has 87 percent in growing-stock classes and more than one-third of its trees are preferred. Red spruce also has the lowest percentage in cull classes (6). Balsam fir leads the dead tree classes with one out of five trees in either a salvable or nonsalvable condition.

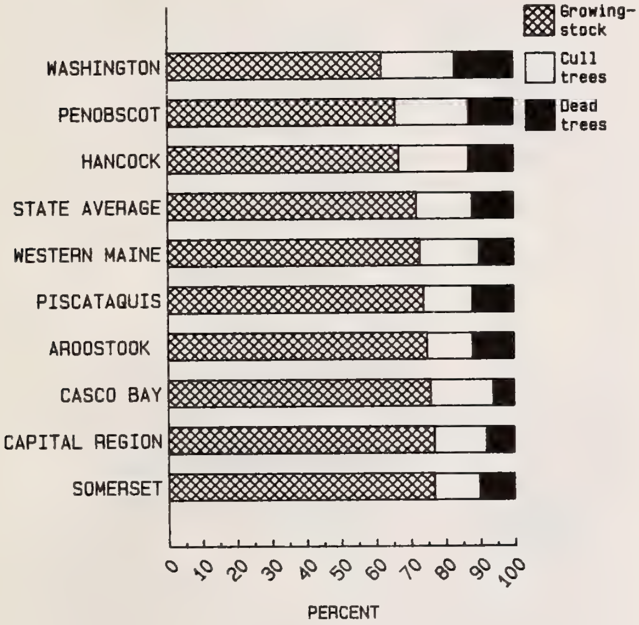
Figure 4.--Tree-class distribution for the top 10 species groups, 1982.



If we do a similar analysis using all species across the nine geographic sampling units, we see that Washington County has the poorest (from the timber viewpoint) tree-class distribution while Somerset County has the best (Fig. 5). Washington County has 62 percent of its trees in growing-stock classes (the lowest), 21 percent in cull-tree classes (tied for the highest), and 17 percent in the dead classes (the highest). This county's forests have been heavily attacked by numerous insect pests, and the county has generally received less protection than other parts of the state. Through the decades of this century the stands have been picked over and the best trees removed. Washington County showed the lowest ratio of net growth to removals (0.6) for the period 1971 to 1981. This suggests that the relatively high level of harvesting of growing-stock trees has resulted in a relatively high residual of cull trees. Its current condition is the result of a history of high-grading logging practices that are reflected in these data more than in other areas. Penobscot and Hancock Counties are also in this general part of the state and are not in much better shape than is Washington County. Table 21 provides geographic unit comparisons by tree class in terms of trees per acre.

When we ignore dead trees and look only at the proportion of the live tree resource that is in cull trees, the results are similar. Figure 6 shows that cull trees are concentrated in southeastern Maine (Washington, Penobscot, and Hancock Counties). York County, in the Casco Bay unit, also has a significant cull resource. A check of the individual species in that county shows that the hardwoods are about the same as the state average. The softwood species, especially white pine, balsam fir, and red spruce, have much greater than average number of cull trees. The white pine culls are mostly rough trees--cabbage pines--that have sustained white pine weevil (Pissodes strobi) damage (more on this later). The fir and spruce trees are not nearly as common here, and are on the edge of their range in Maine. The less favorable site conditions may have caused the high percentage of culls in these species.

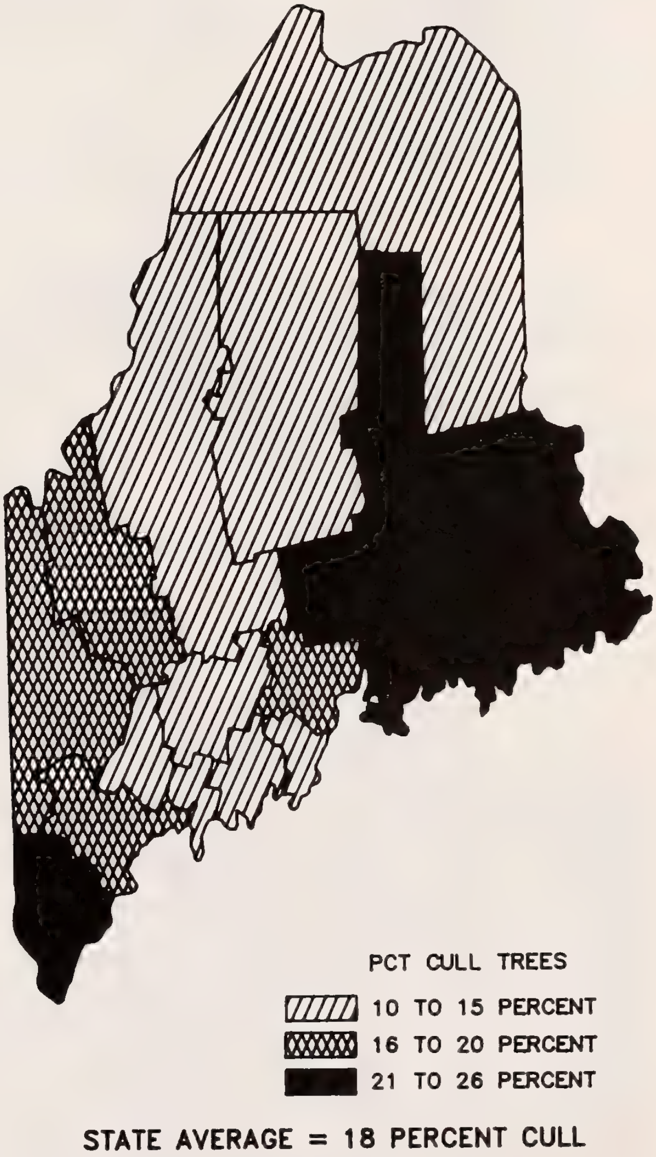
Figure 5.--Tree-class distribution by geographic unit, 1982.



For cull trees, the state average of all species for the state in 1982 was 18 percent, or nearly 2 out of every 5 live trees (5.0+ inches dbh). In 1971 this percentage was 15, indicating that the cull-tree resource has increased. The number of cull trees increased by 19 percent over the period between inventories while the number of growing-stock trees registered a 3 percent decline. The hardwood species, as a group, showed little change moving from 26 percent cull in 1971 to 25 percent in 1982. Beech was the only major hardwood species that had an increase in the proportion of cull trees, moving from 36 percent to 44 percent. This is attributable to the further impact of beech bark disease.

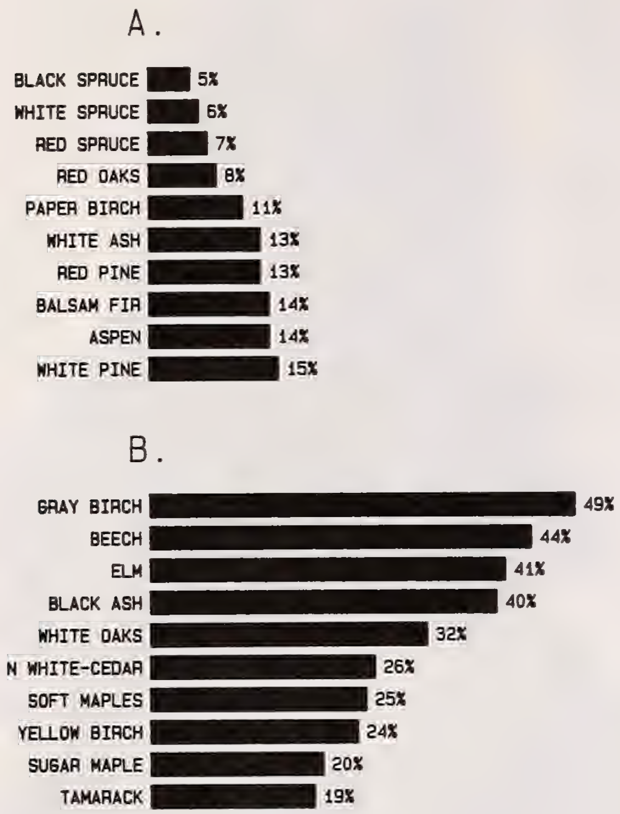
It is in the dominant softwood resource that the major change has occurred, increasing from 10 percent cull trees to 13 percent. Not all species showed an increase, but the spruce-fir resource, which dominates the softwoods, did. Balsam fir showed the greatest shift, from 5 to 14 percent. Stagnant growing conditions in overmature and overstocked stands plus the weakening effects of attack from the spruce budworm (Choristoneura fumiferana) have been the primary causes for the number of cull balsam fir trees to increase 98 percent (nearly double), while the number of growing-stock trees declined by 29 percent over this same period.

Figure 6.--Percentage of live trees (5+ inches dbh) that are cull, 1982.



But despite these trends, the spruce and fir species are still well below the state average in percentage of cull trees (Fig. 7). Since softwoods on the average have only one-half the share of cull trees that hardwoods have, it is not surprising that softwood species dominate the low percentage list while hardwoods dominate the high percentage list.

Figure 7.--Ten species with the lowest (A) and highest (B) percentage of cull trees.



Many factors contribute to the percentage of cull trees for a species. The most important is the inherent capacity of the species to produce sawtimber trees. Gray birch, for instance, is generally a small, short-lived pioneer species that is not recognized as a lumber species. This is borne out by the fact that it has the highest percentage of cull trees--49. Another important factor is the susceptibility of the species to fire, insect, disease, or other damage that might prevent the species from producing timber. Beech and elm are two examples of hardwood species that have high numbers of cull trees due to insect and disease problems--beech bark disease and dutch elm disease, respectively. White pine, though one of the 10 species with the lowest proportion of culls, could have a figure much lower than 15 percent if it were not for the white pine weevil. This insect feeds on the succulent growth of the terminal leaders and eventually kills them. The dead terminal shoot is replaced by one or more branches of the topmost living whorl, which assumes vertical growth causing a crooked or forked stem (Baker 1972). Trees suffering this type of damage for several years become multiple-stemmed, cabbage-shaped, and worthless for timber. A third factor is the level of forest management that has been practiced with a given species or group of species. In Maine, this factor is not very important because the level of sound forest management, especially for sawtimber products, has been low.

The species composition within tree classes is dissimilar. Figure 8 shows the three broad tree classes--growing-stock, cull, and dead--and the top five species within each one. The only consistent species is balsam fir, which ranks first in all classes. But notice that of all the salvable and nonsalvable dead trees 5.0 inches dbh and larger, balsam fir accounts for an extraordinarily large share--43 percent (Fig. 8C). Insect, disease, and old age are obviously affecting the balsam fir resource more than other species. Northern white-cedar is the only other species in the top five for all tree classes. Note that its share of the cull and dead resources exceeds its share of the much larger growing-stock resource. This is so because there was no market for this species for many years and cedar will stand dead or partly dead for many years.

Size

Size classes are based on diameter at breast height, which is the diameter outside bark of a standing tree measured at 4-1/2 feet above the ground. The smallest trees are seedlings or trees at least 1 foot tall and less than 1.0 inch dbh The next two classes are saplings: 2-inch (1.0 to 2.9 inches dbh) and 4-inch (3.0 to 4.9 inches dbh). Once a tree reaches 5.0 inches dbh it qualifies as merchantable-sized, and we calculate cubic volumes from this point on. Poletimber trees range from 5.0 inches dbh to 8.9 inches dbh for softwoods and to 10.9 inches dbh for hardwoods. Sawtimber trees are 9.0 inches dbh and larger for softwoods and 11.0 inches dbh and larger for hardwoods.

As we consider different subsets of the top 10 species for all live trees of all sizes, the species composition shifts (Fig. 9). Balsam fir, which dominated all sizes, is still first for trees 5.0+ inches dbh But for trees 9.0+ inches dbh it fell to the number two spot, and for large trees (15.0+ inches dbh) it accounted for less than 2 percent of the resource and did not make the top 10. Red maple, the most populous hardwood species, remained in the top 10 but fell steadily in rank as only larger sized trees were considered (Fig. 9). White pine, on the other hand, moved in the opposite direction from ninth place to fifth to first as the smaller trees were ignored.

Another way to look at this is to calculate for each species the percentage of all species for each diameter class and then plot these percentages across the diameter classes. I did this for six species (Fig. 10). To interpret this graph, follow a species for each diameter

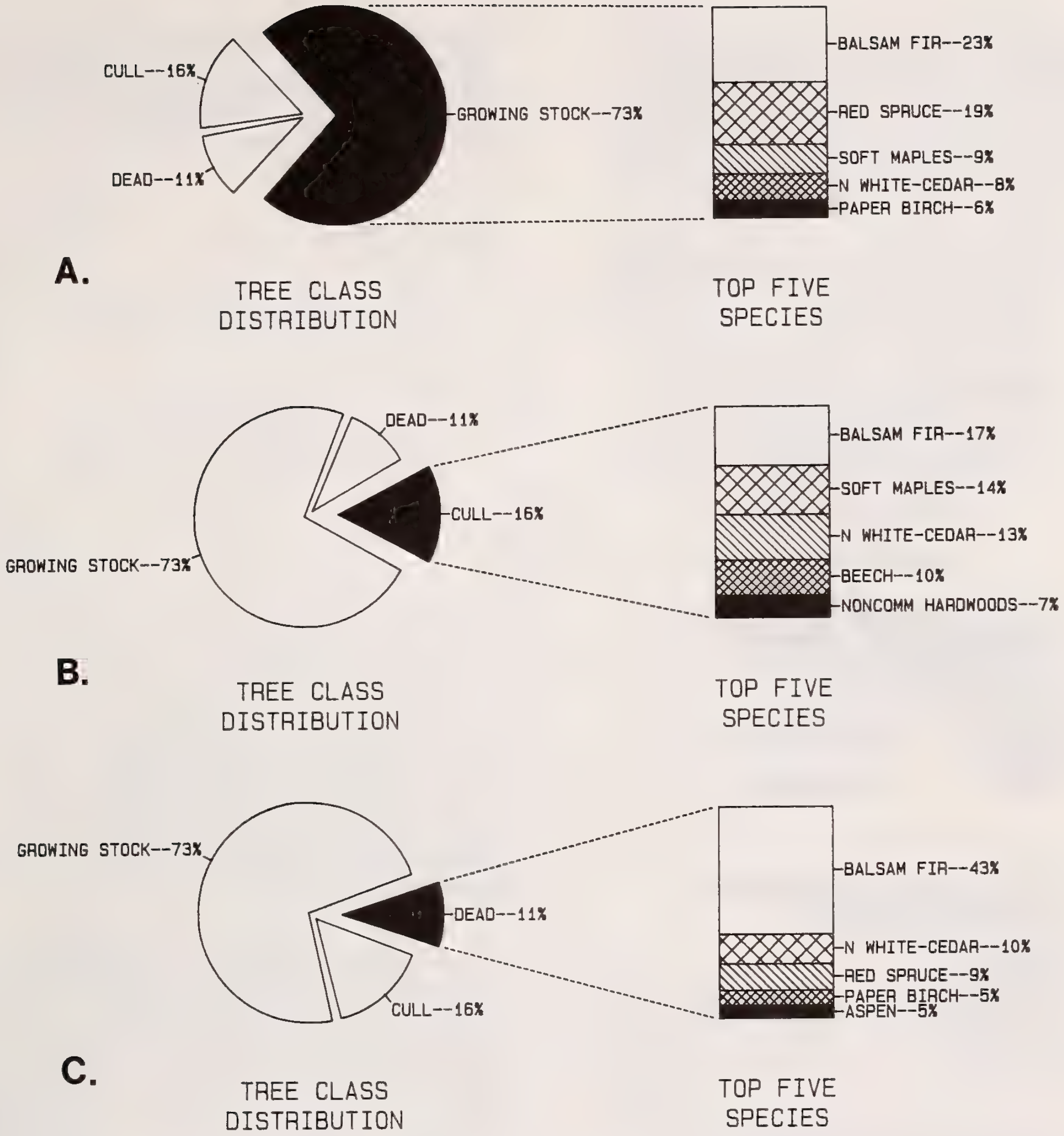


Figure 8.--Percentage of top five species within three broad tree classes: A--growing stock, B--cull, and C--dead.

class to see how it compares with all of the other species. For example, look at balsam fir. For the seedling class, its value is 26 percent, meaning that for all live seedlings in Maine 26 out of every 100 are balsam fir. For the 2-inch sapling class, balsam fir accounts for nearly one out of every three trees. From this point balsam fir's dominance declines sharply. This emphasizes the small-tree nature of the balsam fir resource. In contrast, white pine is a large-tree species whose share of the resource expands with increasing diameter. Its influence begins its steep ascent at the 10-inch diameter class, and for the largest trees white pine accounts for more than 20 percent of the resource. Sugar maple follows a similar trend with notable exceptions in the seedling and sapling classes. Sugar maple is much more prolific in the understory of Maine's woods than is white pine.

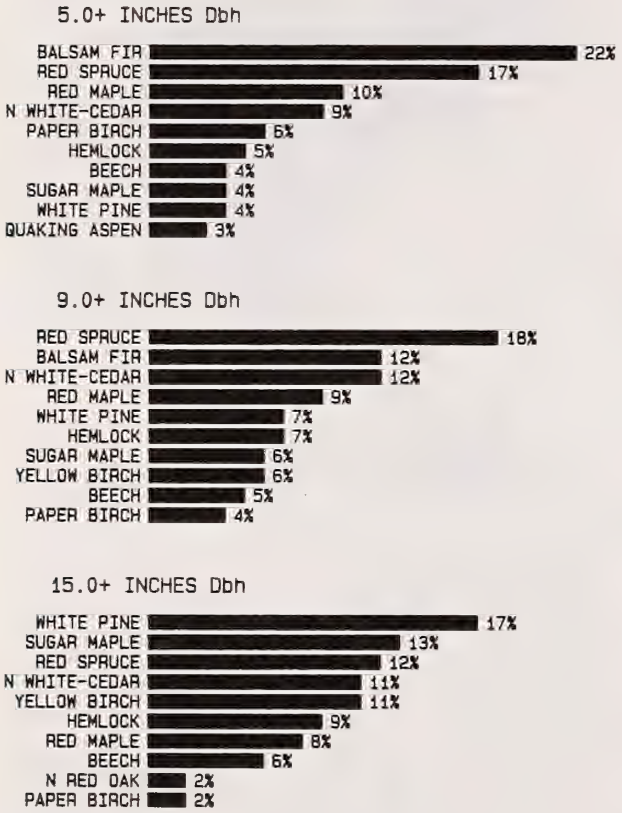


Figure 9.--The top 10 species based on all live trees for three different size classes.

Realizing that averages can be misleading, we can make some important observations by studying the average diameters of growing-stock trees 5.0 inches dbh and larger. The statewide average for all species in 1982 was 8.1 inches. In comparison to other states, Maine has a small-sized timber resource. Of the 14 northeastern states, Maine ranks last in average diameter. It is therefore not surprising that the primary timber industry in the state is pulp and paper--an industry that is well suited to utilizing the abundant resource of small trees that dominates Maine's timberland.

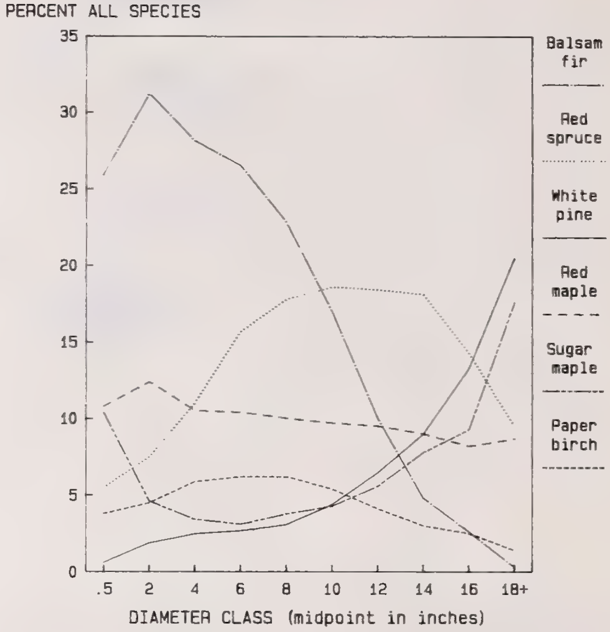


Figure 10.--Size-class concentrations for six species, 1982.

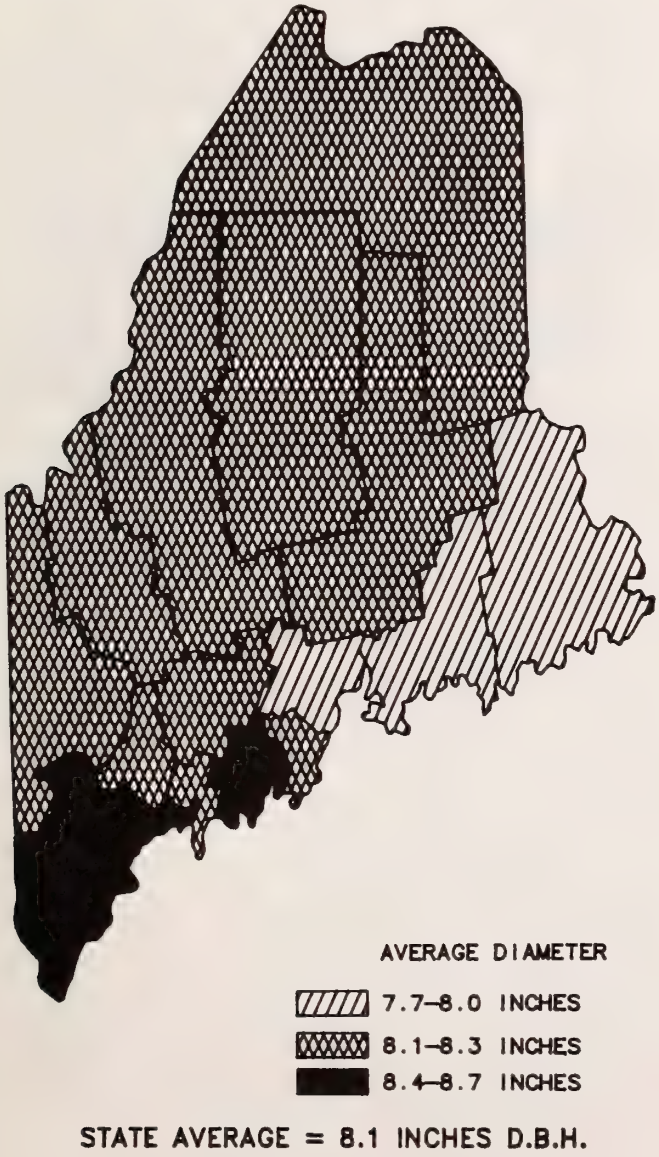
At the county level, the average diameter for all species ranged from 7.7 inches in Waldo County to 8.7 inches in York County (Fig. 11). Eastern Maine, which had the lower quality resource in terms of cull trees (Fig. 6), also has the smaller tree resource. The southern Maine counties have the greatest concentrations of larger trees, which probably reflects better growing conditions as well as a preponderance of white pine (Fig. 2H), a large-tree species. Concentration and continuation of management activities in this region also may have contributed to this situation (personal communication, Kenneth Hendren, Maine Forest Service).

Table 23 shows the average diameter by species. These data, especially at the geographic-unit level, should be used with some caution because in many instances they are based on very small samples. For instance, the average diameter of 19.4 inches for red oaks in Piscataquis County seems extraordinarily large. There are relatively few red oaks in the county and samples are highly variable. If we extract the 10 species (or species groups) with the greatest number of trees in the state and then list them in descending order of average diameter, we get:

1.	White pine	10.1
2.	Sugar maple	9.3
3.	Yellow birch	9.3
4.	Hemlock	9.0
5.	Northern white-cedar	8.6
6.	Aspen	8.3
7.	Red spruce	8.2
8.	Soft maples	8.0
9.	Paper birch	7.6
10.	Balsam fir	7.3

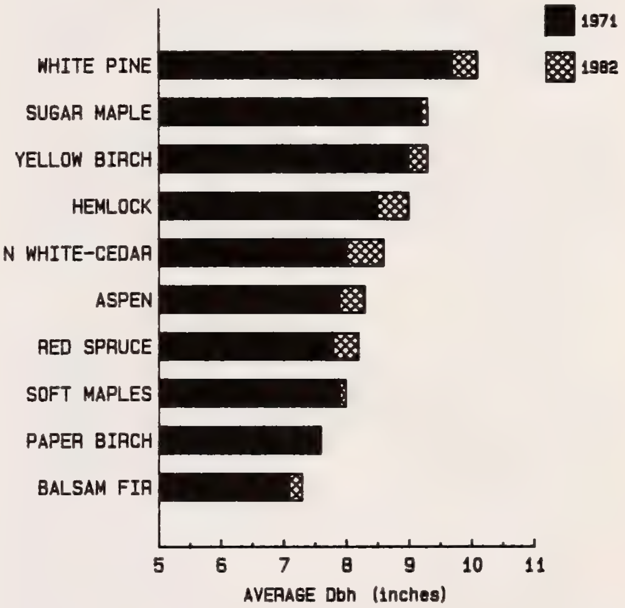
This ranking confirms what was suggested for the six species in figure 10.

Figure 11.--Average diameter of growing-stock trees (5+ inches dbh), 1982.



Comparing these data with the 1971 situation shows that nearly every species registered an increase in average diameter. The average for all species increased from 7.8 to 8.1 inches. Hardwoods moved only slightly (8.2 to 8.3) while softwoods rose 1/2 inch (7.6 to 8.1). Change for the species listed above is shown in figure 12.

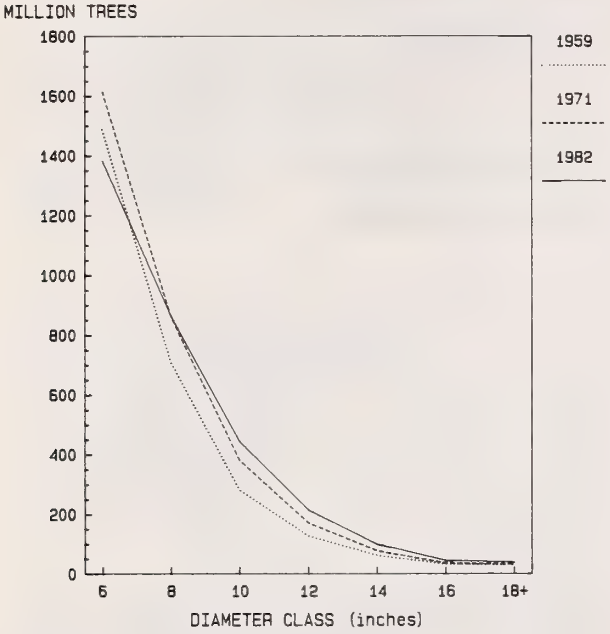
Figure 12.--Change in average diameter for top 10 growing-stock species, 1971-82.



Change in average diameter is the result of two basic transitions. The most obvious is the radial increment of growth that the trees added to their girth in the 11 years between the surveys. This accretion contributes to the noticeable increase for many species. But why is it that some species show no change or even a drop in average diameter? This is explained by the second transition, which is change in the population of the number of trees present at each inventory date. In the forest, which is a living and dynamic ecosystem, trees are growing and moving across the 5.0-inch-dbh threshold and thus entering the population. Other trees are being killed by catastrophic events, such as a spruce budworm outbreak, fire, or a severe windstorm. Still other trees are dying more natural deaths as they are crowded out of a stand or succumb to old age. Trees are also being harvested for a variety of timber products, generally the larger trees for sawlogs and the smaller trees for pulpwood or firewood. So the population of growing-stock trees 5.0 inches dbh and larger is never the same from year to year or survey to survey. And depending on the extent of the shifts and the diameter classes affected most, the average diameter may decline, stay constant, or increase.

To help visualize these dynamics, figures 13, 14, and 15 show the diameter distributions of various species and species groups for the three inventory dates. Looking at all species first, between 1959 and 1971 the number of growing-stock trees increased 16 percent, and this increase was relatively evenly distributed across all diameter classes (Fig. 13). Between 1971 and 1982, this trend changed, and the total number of trees declined 3 percent. The drop was limited to trees in the 6-inch class while the number of trees in the other classes remained unchanged or increased. Despite the decline in numbers of 6-inch trees, this class still accounts for a large--45 percent--segment of the resource.

Figure 13.--Number of growing-stock trees (all species) by diameter class, 1959, 1971, and 1982. Total number of trees in 1959--2,727.8 million, 1971--3,171.3 million, and 1982--3,083.3 million.



Because softwoods account for about two-thirds of the growing-stock resource, it is not surprising to see that the trends in softwoods (Fig. 14A) are very similar to the curves for all species. The only noticeable difference is that the 8-inch class also contributed to the drop in numbers of trees--an 11 percent decline for all softwoods between 1971 and 1982.

The hardwood situation is much different. Between 1959 and 1971, the number of trees increased by a modest 12 percent with increases occurring in nearly all diameter classes (Fig. 14B). But between 1971 and 1982, instead of losing trees as in the softwood case, the hardwoods continued to increase and at an even faster pace--up 19 percent. Again, these increases occurred across the diameter classes,

Figure 14.--Number of softwood (A) and hardwood (B) growing-stock trees by diameter class, 1959, 1971, and 1982. Total number of softwood growing-stock trees in 1959--1,917.8 million, 1971--2,265.7 million, and 1982--2,008.8 million. Total number of hardwood growing-stock trees in 1959--810.0 million, 1971--905.7 million, and 1982--1,074.5 million.

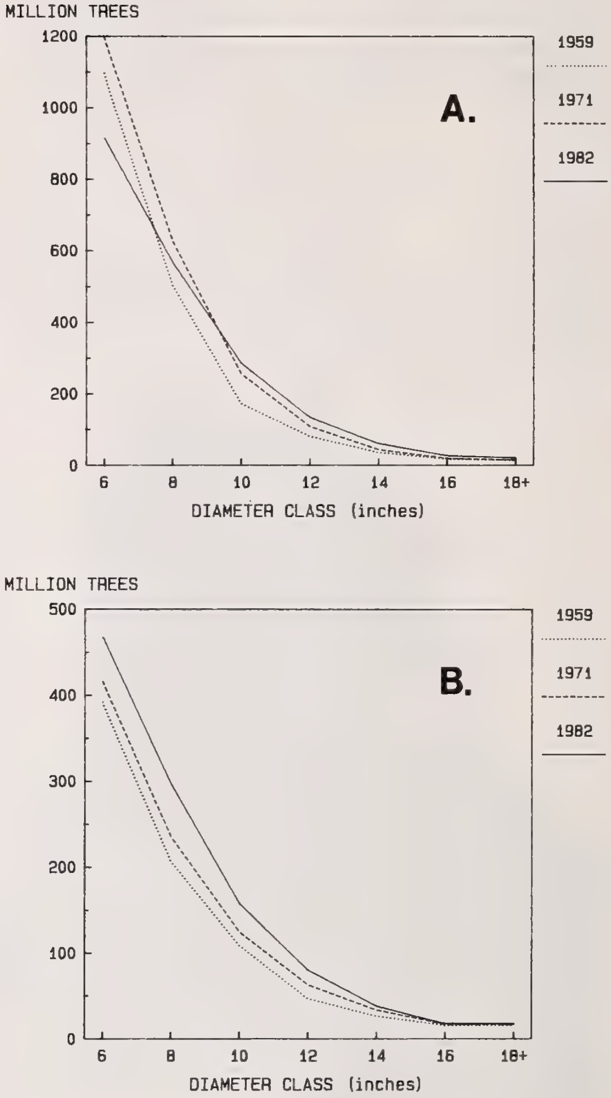
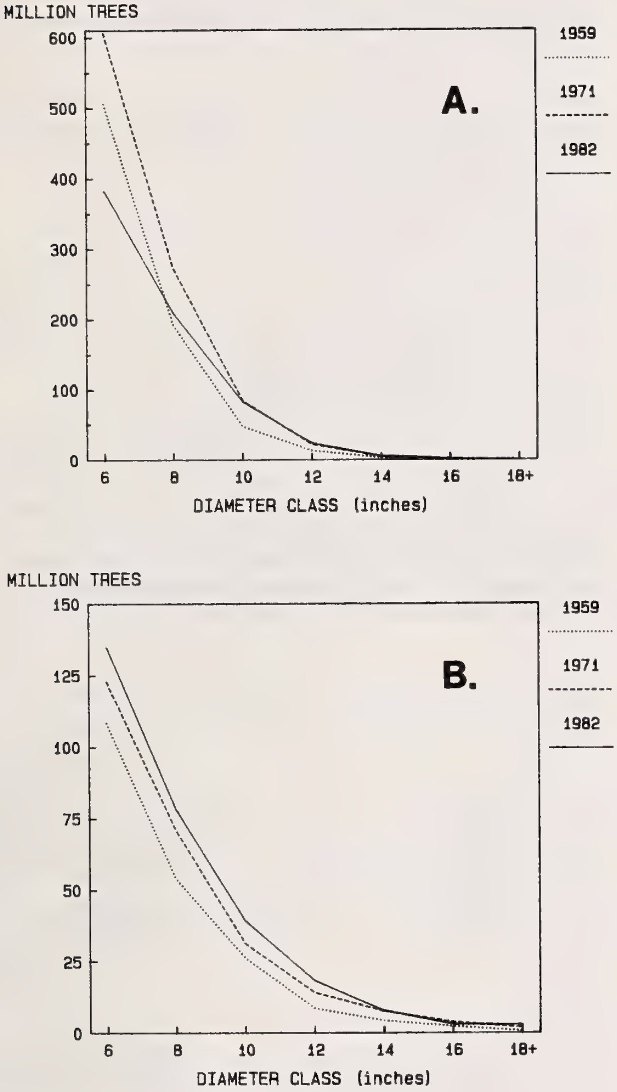


Figure 15.--Number of balsam fir (A) and red maple (B) growing-stock trees by diameter class, 1959, 1971, and 1982. Total number of balsam fir growing-stock trees in 1959--760.6 million, 1971--989.2 million, and 1982--703.6 million. Total number of red maple growing-stock trees in 1959--204.4 million, 1971--252.2 million, and 1982--284.1 million.



with the exception of the larger sawtimber trees which have remained constant since 1959. It is evident that the hardwood resource is changing in ways unlike the softwood resource. It has the characteristics of a thriving resource that is recruiting new trees to the 6-inch class, is growing in size, and is maturing. These are characteristics shared by the hardwood resource throughout the Northeast.

Figure 15 shows the diameter distribution of the most common softwood (balsam fir) and the most common hardwood (red maple). Balsam fir was increasing at a robust rate, 30 percent, between 1959 and 1971. Industry geared up to capitalize on this resource, one which was overstocked, particularly with small, aging trees. Mortality due to suppression and old age began to take its toll, and this process was accelerated by a severe outbreak of the spruce budworm. The result of these factors led to the dramatic reversal between 1971 and 1982 (Fig. 15A). The total number of trees actually fell below the 1959 level.

Red maple continues to build its growing-stock resource. This amazing species has been increasing throughout the Northeast for the last 20 years, and Maine's red maple is no exception (Fig. 15B). While its number of trees has increased across the first four diameter classes (which contain 95 percent of the red maple trees) during both remeasurement periods, its rate of increase has slowed from 23 percent (1959 to 1971) to 13 percent (1971 to 1982). This is somewhat contrary to the overall hardwood trend, and may indicate that red maple in Maine is nearing its potential as a component in Maine's timberland.

Summary

Maine's timberland, as revealed by USDA Forest Service inventories, is composed of 47 different species. Thirty-five of these are hardwoods; this is one of the few statistics where softwoods play a minor role. Softwood species clearly dominate in terms of number of trees, especially balsam fir and the spruces. Species composition is dynamic as opposed to static. It has changed over the relatively short time of 23 years between the first and third inventories. Composition also varies across the state due to changes in climate, soils, and other natural and man-caused factors.

Growing-stock trees dominate the timberland. Cull trees and dead trees come in a distant second and third, respectively. There is quite a range of tree-class distributions by species. Red spruce, for instance, is in a most favorable sawtimber situation, while beech is in a most undesirable condition. Such conditions vary across Maine, with less favorable conditions in the East. The cull resource has increased for softwoods but is still considerably less than it is for hardwoods. Species composition within tree class varies, and balsam fir most clearly demonstrates its dominance in the dead tree resource of Maine.

As different sizes of trees are considered, the species composition also varies. At one extreme, balsam fir dominates the small size classes while white pine is most common in the large sawtimber sizes. The average diameter of trees in Maine is the smallest of all 14 Northeastern states despite an increase since 1971. This increase is due to a combination of accretion and various stand dynamics that affect tree populations. The 6-inch diameter class accounts for nearly one-half of all growing-stock trees despite a significant decline since 1971. This decline occurred in the softwood species, as the hardwoods showed increases in the poletimber and small sawtimber classes while remaining unchanged in the large sawtimber class. These differences between softwoods and hardwoods are attributable to differences in growth patterns, kinds and impacts of damages (insect, disease, weather, fire, etc.) and harvesting practices.

Number of trees is a resource variable that receives little attention. But it can be presented in any number (no pun intended) of ways. The three used here--species, tree class, and size--provide a good, basic description of the tree resource in Maine. And by introducing comparable data from the first two inventories, we have been able to analyze the dynamics of Maine's forest and to understand more completely some of the shifts that are continually occurring within this large and complex ecosystem.

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Appendix

Definition of Terms

Acceptable tree. (a) Live sawtimber trees that do not qualify as preferred trees but are not cull trees. (b) Live poletimber trees that prospectively will not qualify as preferred trees, but are not now or prospectively cull trees.

Accretion. The estimated net growth on growing-stock trees that were measured during the previous inventory, divided by the length of the period between surveys. It does not include the growth on trees that were cut during the period, nor those trees that died.

Commercial species. Tree species presently or prospectively suitable for industrial wood products. Excludes species of typically small size, poor form, or inferior quality, such as hawthorn and sumac.

Cull tree. A rough tree or a rotten tree.

Diameter at breast height (dbh). The diameter outside bark of a standing tree measured at 4-1/2 feet above ground.

Forest land. Land at least 10 percent stocked with trees of any size or that formerly had such tree cover and is not currently developed for nonforest use. The minimum area for classification of forest land is 1 acre.

Geographic unit. A county or a group of counties within a state that is large enough from which to draw sample plots which will yield statistically reliable estimates of timberland area, volume, and components of change.

Growing-stock trees. Live trees of commercial species classified as sawtimber, poletimber, saplings, and seedlings; that is, all live trees of commercial species except rough and rotten trees.

Ingrowth. The estimated net volume of growing-stock trees that became 5.0 inches dbh or larger during the period between inventories, divided by the length of the period between surveys.

Land area. (a) Bureau of Census: The area of dry land and land temporarily or partly covered by water, such as marshes, swamps, and river flood plains; streams, sloughs, estuaries, and canals less than 1/8 statute mile wide; and lakes, reservoirs, and ponds less than 40 acres in area. (b) Forest Inventory and Analysis: same as (a) except that the minimum width of streams, and so on, is 120 feet, and the minimum size of lakes, and so on, is 1 acre.

Noncommercial species. Tree species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial wood products.

Nonsalvable dead tree. A dead tree with most or all of its bark missing that is at least 5.0 inches in dbh and is at least 10 feet in height.

Poletimber trees. Live trees of commercial species meeting regional specifications of soundness and form and at least 5.0 inches dbh, but smaller than sawtimber trees.

Preferred tree. A high-quality tree, from a lumber viewpoint, that would be favored in cultural operations. General characteristics include grade 1 butt log (if sawtimber size), good form, good vigor, and freedom from serious damage.

Rotten tree. A live tree of commercial species that does not contain at least one 12-foot sawlog or two noncontiguous sawlogs, each 8 feet or longer, now or prospectively, and does not meet regional specifications for freedom from defect primarily because of rot; that is, when more than 50 percent of the cull volume in the tree is rotten.

Rough tree. (a) The same as a rotten tree, except that a rough tree does not meet regional specifications for freedom from defect primarily because of roughness or poor form, and (b) a live tree of noncommercial species.

Salvable dead tree. A tree at least 5.0 inches dbh that has recently died and still has intact bark. The tree may be standing, fallen, windthrown, knocked down, or broken off.

Sampling error. A measure of the reliability of an estimate, expressed as a percentage of the estimate. The sampling errors given in this report correspond to one standard deviation; and are calculated as the square root of the variance, divided by the estimate, and multiplied by 100.

Saplings. Live trees 1.0 through 4.9 inches dbh.

Sawlog. A log meeting regional standards of diameter, length, and defect, including a minimum 8-foot length and a minimum diameter inside bark of 6 inches for softwoods and 8 inches for hardwoods.

Sawtimber trees. Live trees of commercial species at least 9.0 inches dbh for softwoods or 11.0 inches for hardwoods containing at least one 12-foot sawlog or two noncontiguous 8-foot sawlogs, and meeting regional specifications for freedom from defect.

Seedlings. Live trees less than 1.0 inch dbh and at least 1 foot in height.

Softwoods. Coniferous trees, usually evergreen and having needles or scalelike leaves.

Timberland. Forest land producing or capable of producing crops of industrial wood (more than 20 cubic feet per acre per year) and not withdrawn from timber utilization. Formerly known as commercial forest land.

Tree class. A classification of the quality or condition of trees for sawlog production. Tree class for sawtimber trees is based on their present condition. Tree class for poletimber trees is a prospective determination--a forecast of their potential quality when they reach sawtimber size (11.0 inches dbh for hardwoods, 9.0 inches dbh for softwoods).

Trees. Woody plants that have well-developed stems and are usually more than 12 feet in height at maturity.

Tree species of Maine (as encountered on field plots)

Scientific Name[a]	Common Name(s)	Occurrence[b]
	SOFTWOODS	
Abies balsamea (L.) Mill.	balsam fir	vc
Juniperus virginiana L.	eastern redcedar	vr
Larix laricina (Du Roi) K. Koch	tamarack, eastern larch, hackmatack	c
Picea abies (L.) Karst.	Norway spruce	vr
P. glauca (Moench) Voss	white spruce	c
P. mariana (Mill.) B.S.P.	black spruce	c
P. rubens Sarg.	red spruce	vc
Pinus resinosa Ait.	red or Norway pine	r
P. rigida Mill.	pitch pine	vr
P. strobus L.	eastern white pine	c
Thuja occidentalis L.	northern white-cedar	vc
Tsuga canadensis (L.) Carr.	eastern hemlock	c
	HARDWOODS	
Acer pensylvanicum L.[c]	striped maple, moosewood	c
A. rubrum L.	red, soft, or swamp maple	vc
A. saccharinum L.	silver or soft maple	vr
A. saccharum Marsh.	sugar, rock, or hard maple	c
A. spicatum Lam.[c]	mountain maple	vr
Ailanthus altissima (Mill.) Swingle[c]	Ailanthus, tree-of-heaven	vr
Betula alleghaniensis Britton	yellow birch	c
B. lenta L.	sweet, black, or cherry birch	vr
B. papyrifera Marsh.	paper, white, or canoe birch	vc
B. populifolia Marsh.	gray birch	c
Carpinus caroliniana Walt.[c]	American hornbeam, blue-beech	vr
Carya spp. Nutt.	hickory	vr
Fagus grandifolia Ehrh.	American beech	c
Fraxinus americana L.	white ash	c
F. nigra Marsh.	black or brown ash	c
F. pennsylvanica Marsh.	green or red ash	r
Juglans cinera L.	butternut	vr
Malus spp. Mill.[c]	apple	r
Nyssa sylvatica Marsh.	blackgum or black tupelo	vr
Ostrya virginiana (Mill.) K. Koch[c]	eastern hophornbeam or ironwood	r
Populus balsamifera L.	balsam poplar	r
P. grandidentata Michx.	bigtooth aspen, poplar, or popple	c
P. tremuloides Michx.	quaking or trembling aspen, popple	c
Prunus pensylvanica L.f.[c]	pin or fire cherry	r
P. serotina Ehrh.	black cherry	r
Quercus alba L.	white oak	r
Q. coccinea Muenchh.	scarlet oak	vr
Q. rubra L.	northern red oak	c
Q. velutina Lam.	black or yellow oak	r
Robinia pseudoacacia L.	black locust	vr
Salix spp. L.[c]	willow	vr
S. nigra Marsh.	black willow	vr
Tilia americana L.	American basswood	r
Ulmus americana L.	American elm	r
U. rubra Muhl.	slippery or red elm	vr

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[a] Names according to: Little, Elbert L., Jr. Checklist of United States trees (native and naturalized). Agric. Handb. 541. Washington, DC: U.S. Department of Agriculture, Forest Service; 1979. 375 p.

[b] Occurrence is based on the proportion of the species among all live trees 5.0 inches dbh or larger encountered on forest survey field plots: vr = very rare (<0.05%), r = rare (0.05 to 0.49%), c = common (0.5 to 4.9%), and vc = very common (≥5.0%).

[c] Noncommercial species.

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Table 1.--Number of all live trees on timberland by species and diameter class, Maine, 1982[a]

Species	Diameter class (inches at breast height)										All classes	Sampling error of all classes
	Less than 1.0[b]	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17+		
	Thousand trees											Percent
Balsam fir	20,921,795	2,233,681	809,617	465,156	231,577	87,268	25,030	5,677	1,420	182	24,781,403	4
Tamarack	57,943	20,388	21,682	8,942	3,779	3,021	1,605	754	301	348	118,763	25
White spruce	303,050	60,203	78,562	43,396	24,075	11,891	4,846	1,903	622	347	528,895	11
Black spruce	566,345	104,240	81,891	56,493	21,346	7,864	1,858	947	126	58	841,168	20
Red spruce	4,472348	538,578	315,923	274,872	180,767	95,382	46,161	21,285	7,760	5,031	5,958,107	6
Red pine	14,807	1,936	1,685	1,139	1,331	1,494	1,325	554	370	101	24,742	37
White pine	450,444	138,690	71,972	47,098	31,154	22,651	16,384	10,589	7,230	10,869	807,081	8
Northern white-cedar	3,069,840	248,421	193,013	129,676	96,253	55,465	33,492	15,744	6,973	4,559	3,853,436	9
Hemlock	1,326,148	145,033	98,204	67,813	45,204	28,572	18,634	9,322	5,260	3,943	1,748,133	9
Other softwoods	0	0	840	314	528	343	153	176	50	10	2,414	41
Total softwoods	31,182,720	3,491,170	1,673,389	1,094,899	636,014	313,951	149,488	66,951	30,112	25,448	38,664,142	3
Sugar maple	8,349,888	328,211	97,168	54,813	38,722	22,030	14,100	9,165	5,085	9,354	8,928,536	8
Soft maples	8,672,269	890,945	301,044	182,868	101,395	49,984	23,906	10,665	4,459	4,609	10,242,144	4
Yellow birch	4,236,980	264,006	58,640	40,643	31,683	22,286	13,661	7,420	4,929	6,362	4,686,610	8
Paper birch	3,064,981	321,997	169,164	108,344	63,061	27,982	10,162	3,482	1,365	760	3,771,298	7
Gray birch	644,655	151,315	91,218	28,720	4,375	729	288	108	64	9	921,481	12
Beech	3,588,022	511,511	129,212	67,556	38,569	23,625	13,768	7,858	4,057	2,439	4,386,617	7
White ash	1,396,627	74,584	27,932	13,512	10,416	6,142	2,640	1,077	476	484	1,533,890	10
Black ash	504,437	57,365	26,005	15,072	7,562	3,079	1,748	797	243	216	616,524	14
Aspen	2,861,633	204,231	100,088	74,202	55,166	33,927	15,308	6,933	2,034	1,479	3,355,001	12
White oaks	107,162	9,244	7,632	2,902	1,045	259	57	90	75	133	128,599	37
Red oaks	614,992	74,157	36,386	22,154	14,593	7,112	4,403	2,276	1,168	1,192	778,433	15
Basswood	70,912	12,302	1,677	848	805	302	360	160	97	180	87,643	28
Elm	92,684	10,683	6,342	2,579	1,612	437	254	415	70	279	115,355	45
Other hardwoods	970,114	53,040	14,040	6,126	2,696	861	435	176	117	71	1,047,676	12
Noncomm. hardwoods	14,277,034	707,324	138,925	38,100	7,233	1,152	250	252	88	91	15,170,449	4
Total hardwoods	49,452,390	3,670,915	1,205,473	658,439	378,933	199,907	101,340	50,874	24,327	27,658	55,770,256	3
Total, all species	80,635,110	7,162,085	2,878,862	1,753,338	1,014,947	513,858	250,828	117,825	54,439	53,106	94,434,398	1.9
Sampling error of total (percent)	2	3	3	2	2	2	2	2	3	3	1.9	

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[a] In this and other tables zeroes indicate no data or negligible amounts.

[b] This is the seedling size class. The minimum size for seedlings is a total height of 1 foot.

Table 2.--Number of all live trees on timberland by species and diameter class, Aroostook County, Maine, 1982

Species	Diameter class (inches at breast height)										All classes	Sampling error of all classes
	Less than 1.0[a]	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17+		
	Thousand trees											Percent
Balsam fir	4,948,098	375,369	205,303	135,766	73,269	30,274	10,063	2,014	513	142	5,780,811	7
Tamarack	34,537	8,700	3,468	2,431	850	881	449	271	134	254	51,975	44
White spruce	119,238	23,890	23,911	15,612	10,611	5,458	2,827	955	346	107	202,955	15
Black spruce	185,695	42,557	20,414	30,481	11,492	3,764	633	152	0	29	295,217	25
Red spruce	682,764	73,313	44,295	50,788	37,375	20,891	11,480	5,064	2,018	1,375	929,363	10
Red pine	1,689	0	0	0	0	0	0	0	0	0	1,689	100
White pine	18,868	1,723	0	1,380	592	233	400	269	181	467	24,113	28
Northern white-cedar	1,253,617	99,571	80,944	46,834	35,243	21,782	14,708	7,258	3,142	2,001	1,565,100	14
Hemlock	80,061	5,183	10,351	3,284	2,482	1,404	1,595	507	478	595	105,940	25
Other softwoods	0	0	0	0	58	0	0	0	0	0	58	100
Total softwoods	7,324,567	630,306	388,686	286,576	171,972	84,687	42,155	16,490	6,812	4,970	8,957,221	6
Sugar maple	2,230,309	97,801	30,789	18,375	10,682	6,307	3,639	2,730	1,755	3,901	2,406,288	13
Soft maples	1,929,629	122,134	49,704	20,858	9,765	5,360	2,288	1,484	699	646	2,142,567	8
Yellow birch	1,056,214	49,751	6,860	7,341	5,329	3,850	2,792	1,449	908	1,114	1,135,608	10
Paper birch	428,439	46,105	37,539	16,060	8,781	3,818	877	272	142	46	542,079	15
Gray birch	3,446	0	1,723	177	0	0	0	0	0	0	5,346	97
Beech	906,191	61,693	17,145	10,842	6,711	4,425	4,264	2,870	1,800	1,023	1,016,964	15
White ash	110,159	6,873	5,127	650	668	598	170	0	79	63	124,387	25
Black ash	135,928	17,229	5,173	3,162	2,034	942	659	244	140	93	165,604	28
Aspen	1,017,237	66,784	20,668	19,012	14,888	9,943	4,647	1,977	708	429	1,156,293	22
White oaks	0	0	0	0	0	0	0	0	0	0	0	-
Red oaks	0	0	0	0	0	0	40	30	0	0	70	100
Basswood	13,994	3,499	0	59	0	0	0	0	0	0	17,552	100
Elm	8,654	1,733	1,723	680	238	118	92	29	0	8	13,275	69
Other hardwoods	80,125	0	0	119	0	0	37	0	0	0	80,281	54
Noncomm. hardwoods	3,329,544	144,512	22,308	4,153	820	469	0	54	27	0	3,501,887	8
Total hardwoods	11,249,869	618,114	198,759	101,488	59,916	35,830	19,505	11,139	6,258	7,323	12,308,201	5
Total, all species	18,574,436	1,248,420	587,445	388,064	231,888	120,517	61,660	27,629	13,070	12,293	21,265,422	3.5
Sampling error of total (percent)	4	6	7	3	3	3	4	5	7	6	3.5	

[a] This is the seedling size class. The minimum size for seedlings is a total height of 1 foot.

Table 3.--Number of all live trees on timberland by species and diameter class, Capital Region, Maine, 1982

Species	Diameter class (inches at breast height)										All classes	Sampling error of all classes
	Less than 1.0[a]	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17+		
	Thousand trees											Percent
Balsam fir	765,852	184,696	64,935	17,704	5,675	1,381	189	43	9	0	1,040,484	8
Tamarack	1,704	0	826	605	627	286	236	155	93	24	4,556	43
White spruce	6,604	625	1,623	1,225	557	309	185	73	9	15	11,225	38
Black spruce	10,192	0	0	91	63	14	0	0	0	0	10,360	99
Red spruce	65,417	19,739	7,467	9,847	5,710	3,228	1,621	950	374	214	114,567	16
Red pine	830	0	0	0	0	14	28	33	11	0	916	91
White pine	37,426	20,841	10,086	7,542	5,254	4,082	3,173	1,879	925	1,742	92,950	14
Northern white-cedar	58,445	14,808	6,635	5,294	3,152	1,372	388	76	37	0	90,207	28
Hemlock	55,524	13,226	11,640	5,535	3,771	3,253	1,760	1,215	624	393	96,941	16
Other softwoods	0	0	0	0	0	0	0	0	0	0	0	-
Total softwoods	1,001,994	253,935	103,212	47,843	24,809	13,939	7,580	4,424	2,082	2,388	1,462,206	7
Sugar maple	74,470	14,063	7,466	3,035	2,006	850	290	90	25	94	102,389	26
Soft maples	370,082	113,487	31,682	20,747	11,804	5,518	2,716	990	415	632	558,073	10
Yellow birch	65,325	11,759	8,272	1,683	1,188	652	289	205	58	24	89,455	26
Paper birch	181,923	17,976	22,712	8,631	4,456	1,837	709	264	78	20	238,606	20
Gray birch	118,245	25,014	19,676	6,687	978	61	14	0	23	9	170,707	18
Beech	161,717	35,465	11,607	4,001	2,430	1,050	552	128	68	60	217,078	27
White ash	214,164	19,747	812	2,048	1,333	752	213	101	87	54	239,311	16
Black ash	9,903	829	0	537	65	25	0	15	0	14	11,388	44
Aspen	197,889	28,181	12,486	8,930	5,454	2,549	985	358	62	9	256,903	19
White oaks	1,662	816	0	89	57	0	0	0	0	14	2,638	56
Red oaks	124,192	26,670	8,303	5,225	3,716	2,093	1,575	588	390	365	173,117	15
Basswood	10,733	3,295	829	156	283	85	56	42	40	18	15,537	35
Elm	5,777	818	1,654	310	259	113	57	58	0	0	9,046	45
Other hardwoods	276,836	20,792	3,401	1,955	1,116	637	129	45	42	5	304,958	20
Noncomm. hardwoods	645,312	53,319	7,284	1,925	884	137	70	14	33	49	709,027	17
Total hardwoods	2,458,230	372,231	136,184	65,959	36,029	16,359	7,655	2,898	1,321	1,367	3,098,233	7
Total, all species	3,460,224	626,166	239,396	113,802	60,838	30,298	15,235	7,322	3,403	3,755	4,560,439	5.0
Sampling error of total (percent)	6	6	8	4	4	5	6	7	9	7	5.0	

[a] This is the seedling size class. The minimum size for seedlings is a total height of 1 foot.

Table 4.--Number of all live trees on timberland by species and diameter class, Casco Bay, Maine, 1982

Species	Diameter class (inches at breast height)										All classes	Sampling error of all classes
	Less than 1.0[a]	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17+		
	Thousand trees											Percent
Balsam fir	379,195	75,875	17,897	5,234	1,948	967	166	30	0	0	481,312	16
Tamarack	0	824	823	272	0	53	85	44	0	0	2,101	92
White spruce	0	0	0	102	40	0	0	0	0	0	142	82
Black spruce	842	0	0	407	0	0	14	0	0	0	1,263	76
Red spruce	78,716	15,650	4,194	1,562	931	669	290	137	38	0	102,187	72
Red pine	1,594	0	1,685	280	265	325	253	85	27	0	4,514	40
White pine	113,992	72,640	37,458	17,681	12,281	8,573	5,683	3,714	2,983	3,429	278,434	11
Northern white-cedar	22,182	0	0	509	270	114	36	0	0	0	23,111	97
Hemlock	255,719	50,379	12,689	9,599	6,754	4,724	3,578	2,216	1,097	844	347,599	15
Other softwoods	0	0	840	244	470	263	153	176	50	10	2,206	44
Total softwoods	852,240	215,368	75,586	35,890	22,959	15,688	10,258	6,402	4,195	4,283	1,242,869	10
Sugar maple	116,036	20,375	6,806	1,471	659	304	111	146	44	105	146,057	21
Soft maples	654,192	164,800	52,089	27,108	12,757	5,400	2,365	920	334	355	920,320	9
Yellow birch	45,533	9,244	866	1,523	995	330	180	72	13	43	58,799	26
Paper birch	187,860	37,233	16,887	6,484	3,163	1,462	367	162	59	38	253,715	16
Gray birch	222,506	56,914	19,390	3,722	625	85	59	0	12	0	303,313	21
Beech	121,188	31,538	9,395	3,466	2,176	635	481	194	93	113	169,279	16
White ash	178,425	20,370	7,617	2,909	1,119	420	132	14	26	54	211,086	16
Black ash	3,103	3,404	0	271	107	0	0	0	0	0	6,885	47
Aspen	196,560	19,755	7,601	6,680	4,293	1,743	332	132	29	6	237,131	23
White oaks	40,703	8,428	7,632	1,596	718	259	57	90	75	98	59,656	27
Red oaks	269,381	32,814	23,721	11,551	8,204	3,149	1,934	1,211	387	508	352,860	11
Basswood	11,938	3,408	848	125	28	0	0	14	0	0	16,361	46
Elm	10,847	0	863	87	227	0	18	14	0	0	12,056	72
Other hardwoods	216,143	15,222	2,566	1,323	513	83	88	64	15	14	236,031	19
Noncomm. hardwoods	600,728	47,159	4,244	946	217	112	0	0	0	6	653,412	22
Total hardwoods	2,875,143	470,664	160,525	69,262	35,801	13,982	6,124	3,033	1,087	1,340	3,636,961	7
Total, all species	3,727,383	686,032	236,111	105,152	58,760	29,670	16,382	9,435	5,282	5,623	4,879,830	6.0
Sampling error of total (percent)	7	6	8	4	4	5	5	6	9	7	6.0	

[a] This is the seedling size class. The minimum size for seedlings is a total height of 1 foot.

Table 5.--Number of all live trees on timberland by species and diameter class, Hancock County, Maine, 1982

Species	Diameter class (inches at breast height)										All classes	Sampling error of all classes
	Less than 1.0[a]	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17+		
	Thousand trees											Percent
Balsam fir	944,538	208,812	49,314	20,785	5,845	1,256	284	33	0	0	1,230,867	14
Tamarack	11,626	0	0	419	138	311	34	67	0	34	12,629	94
White spruce	16,154	1,938	0	851	261	134	66	67	0	0	19,471	74
Black spruce	6,045	5,967	10,074	2,120	918	244	34	67	0	0	25,469	61
Red spruce	375,348	81,386	27,788	14,165	10,845	6,618	3,469	1,285	665	415	521,984	24
Red pine	0	0	0	0	0	206	130	70	0	21	427	62
White pine	17,439	1,938	4,030	1,601	859	644	783	247	372	348	28,261	44
Northern white-cedar	185,233	23,885	9,920	6,627	4,587	2,252	1,181	185	296	0	234,166	38
Hemlock	31,784	1,938	7,794	4,830	2,156	2,146	1,132	278	300	314	52,672	34
Other softwoods	0	0	0	0	0	0	0	0	0	0	0	-
Total softwoods	1,588,167	325,864	108,920	51,398	25,609	13,811	7,113	2,299	1,633	1,132	2,125,946	11
Sugar maple	5,890	3,875	3,953	1,211	136	274	79	103	133	114	15,768	60
Soft maples	143,779	39,008	15,923	12,180	6,886	2,639	1,072	439	305	251	222,482	19
Yellow birch	241,630	14,104	3,953	1,976	1,644	1,003	342	175	158	172	265,157	68
Paper birch	27,525	9,997	7,751	8,814	4,074	1,510	368	72	0	42	60,153	28
Gray birch	32,942	7,751	3,875	1,585	136	0	34	0	0	0	46,323	57
Beech	54,874	38,986	9,689	3,659	611	392	117	98	25	68	108,519	40
White ash	9,997	0	5,813	749	256	209	155	135	25	51	17,390	57
Black ash	32,161	0	2,015	622	0	63	125	35	34	0	35,055	94
Aspen	91,539	7,863	5,926	3,479	2,605	1,813	575	329	0	42	114,171	41
White oaks	0	0	0	0	0	0	0	0	0	0	0	-
Red oaks	0	1,938	0	309	256	133	0	33	59	22	2,750	73
Basswood	0	0	0	0	0	0	0	0	0	0	0	-
Elm	0	0	0	0	0	0	0	0	0	0	0	-
Other hardwoods	37,566	0	3,875	200	133	0	0	0	0	0	41,774	47
Noncomm. hardwoods	205,730	9,891	7,905	683	410	69	0	0	0	0	224,688	28
Total hardwoods	883,633	133,413	70,678	35,467	17,147	8,105	2,867	1,419	739	762	1,154,230	20
Total, all species	2,471,800	459,277	179,598	86,865	42,756	21,916	9,980	3,718	2,372	1,894	3,280,176	9.0
Sampling error of total (percent)	11	12	14	8	7	9	12	14	15	15	9.0	

[a] This is the seedling size class. The minimum size for seedlings is a total height of 1 foot.

Table 6.--Number of all live trees on timberland by species and diameter class, Penobscot County, Maine, 1982

Species	Diameter class (inches at breast height)										All classes	Sampling error of all classes
	Less than 1.0[a]	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17+		
	Thousand trees											Percent
Balsam fir	3,071,794	258,481	58,478	42,936	16,131	4,439	640	73	34	0	3,453,006	11
Tamarack	7,778	0	5,807	1,995	1,129	554	308	108	0	0	17,679	46
White spruce	44,787	5,825	7,743	3,466	1,388	507	172	130	91	87	64,196	29
Black spruce	27,124	9,679	1,936	2,058	486	317	80	34	0	0	41,714	65
Red spruce	451,700	40,741	29,124	23,544	18,552	11,055	5,271	2,382	510	137	583,016	15
Red pine	0	1,936	0	217	250	289	490	130	126	15	3,453	62
White pine	110,827	11,691	9,738	2,857	1,664	1,544	1,125	973	660	1,193	142,272	25
Northern white-cedar	583,279	39,033	38,946	35,114	21,976	9,197	4,529	1,629	311	211	734,225	22
Hemlock	559,429	30,810	20,946	17,964	13,017	6,769	4,548	1,987	857	579	656,906	20
Other softwoods	0	0	0	0	0	0	0	0	0	0	0	-
Total softwoods	4,856,718	398,196	172,718	130,151	74,593	34,671	17,163	7,446	2,589	2,222	5,696,467	10
Sugar maple	677,552	31,059	7,639	5,151	4,279	2,412	1,264	993	436	626	731,411	25
Soft maples	986,797	70,016	31,113	20,039	11,732	5,612	2,998	1,236	321	484	1,130,348	12
Yellow birch	601,342	9,738	1,936	5,401	2,910	1,948	955	441	299	293	625,263	19
Paper birch	201,231	23,246	15,528	6,607	4,807	2,960	945	348	151	73	255,896	25
Gray birch	107,668	11,656	21,381	6,492	866	0	0	0	0	0	148,063	30
Beech	715,711	88,762	25,224	14,008	8,111	3,490	2,135	971	336	255	859,003	18
White ash	194,229	0	0	1,991	1,071	864	570	296	67	44	199,132	26
Black ash	124,903	1,953	5,880	3,917	1,227	685	331	272	0	50	139,218	35
Aspen	359,815	11,562	5,772	7,295	7,212	6,239	2,910	1,490	180	125	402,600	41
White oaks	1,953	0	0	456	196	0	0	0	0	0	2,605	79
Red oaks	11,657	1,953	0	268	67	67	127	0	133	33	14,305	50
Basswood	15,486	0	0	267	201	0	132	71	57	53	16,267	67
Elm	48,393	3,907	0	733	487	0	34	170	33	271	54,028	90
Other hardwoods	67,891	1,954	0	864	134	67	66	33	0	0	71,009	58
Noncomm. hardwoods	1,351,145	75,723	9,696	2,643	552	139	33	0	0	0	1,439,931	15
Total hardwoods	5,465,773	331,529	124,169	76,132	43,852	24,483	12,500	6,321	2,013	2,307	6,089,079	9
Total, all species	10,322,491	729,725	296,887	206,283	118,445	59,154	29,663	13,767	4,602	4,529	11,785,546	6.0
Sampling error of total (percent)	7	8	10	4	4	5	6	7	11	10	6.0	

[a] This is the seedling size class. The minimum size for seedlings is a total height of 1 foot.

Table 7.--Number of all live trees on timberland by species and diameter class, Piscataquis County, Maine, 1982

Species	Diameter class (inches at breast height)										All classes	Sampling error of all classes
	Less than 1.0[a]	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17+		
	Thousand trees											Percent
Balsam fir	3,588,291	237,685	129,450	72,159	38,548	14,657	3,761	771	170	0	4,085,492	9
Tamarack	0	4,258	4,255	1,939	294	432	170	73	0	0	11,421	69
White spruce	48,041	17,430	17,442	6,142	3,321	1,977	758	233	36	115	95,495	30
Black spruce	26,776	6,438	4,255	5,596	2,591	1,442	807	476	101	29	48,511	29
Red spruce	1,199,345	97,429	87,138	70,265	40,841	20,026	8,898	5,264	2,002	1,356	1,532,564	14
Red pine	0	0	0	0	0	0	0	0	0	0	0	-
White pine	35,578	6,408	0	2,922	1,489	1,348	920	309	455	1,176	50,605	29
Northern white-cedar	491,791	17,209	19,521	10,476	12,020	8,505	5,629	2,915	1,829	1,383	571,278	30
Hemlock	55,983	4,255	6,401	3,761	2,440	1,819	943	413	441	487	76,943	35
Other softwoods	0	0	0	0	0	0	0	0	0	0	0	-
Total softwoods	5,445,805	391,112	268,462	173,260	101,544	50,206	21,886	10,454	5,034	4,546	6,472,309	8
Sugar maple	2,134,110	19,296	4,274	5,213	5,098	3,363	2,430	1,840	751	1,706	2,178,081	21
Soft maples	1,569,651	44,902	11,071	15,987	10,441	6,259	3,468	1,382	752	703	1,664,616	13
Yellow birch	797,575	51,003	11,071	4,681	4,039	3,426	2,391	1,099	777	1,043	877,105	14
Paper birch	381,257	59,659	12,843	9,416	4,531	2,423	907	404	180	86	471,706	27
Gray birch	4,255	0	2,128	527	73	74	37	36	0	0	7,130	66
Beech	511,871	88,809	8,566	8,076	5,406	4,815	2,219	1,569	682	326	632,339	16
White ash	254,147	8,551	0	775	939	540	177	121	36	41	265,327	43
Black ash	111,273	6,420	2,146	1,921	1,476	404	122	157	31	29	123,979	31
Aspen	149,572	8,520	8,321	2,533	4,102	3,326	1,407	923	354	326	179,384	34
White oaks	0	0	0	0	0	0	0	0	0	0	0	-
Red oaks	11,060	0	0	0	0	0	0	36	0	97	11,193	59
Basswood	0	0	0	73	184	74	99	33	0	0	463	51
Elm	4,255	2,127	0	0	129	73	0	0	0	0	6,584	97
Other hardwoods	177,367	6,288	0	0	143	0	60	0	0	0	183,858	39
Noncomm. hardwoods	2,064,434	73,561	8,584	6,348	911	0	73	37	0	0	2,153,948	9
Total hardwoods	8,170,827	369,136	69,004	55,550	37,472	24,777	13,390	7,637	3,563	4,357	8,755,713	8
Total, all species	13,616,632	760,248	337,466	228,810	139,016	74,983	35,276	18,091	8,597	8,903	15,228,022	6.0
Sampling error of total (percent)	7	11	10	6	5	5	5	6	9	7	6.0	

[a] This is the seedling size class. The minimum size for seedlings is a total height of 1 foot.

Table 8.--Number of all live trees on timberland by species and diameter class, Somerset County, Maine, 1982

Species	Diameter class (inches at breast height)										All classes	Sampling error of all classes
	Less than 1.0[a]	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17+		
	Thousand trees											Percent
Balsam fir	2,754,003	313,657	128,435	75,956	48,862	19,037	4,490	1,290	409	16	3,346,155	12
Tamarack	0	2,102	0	361	0	134	36	0	36	0	2,669	80
White spruce	33,580	10,495	14,697	7,437	2,823	1,357	402	226	72	0	71,089	26
Black spruce	138,757	6,311	10,507	8,551	3,154	876	116	72	25	0	168,369	40
Red spruce	716,737	88,468	54,974	48,288	31,479	15,338	6,806	3,103	976	603	966,772	14
Red pine	6,307	0	0	288	668	548	275	0	36	21	8,143	98
White pine	23,090	6,297	6,297	2,888	2,477	1,370	946	714	337	795	45,211	31
Northern white-cedar	285,805	21,023	6,301	8,435	10,105	6,889	4,768	2,596	995	728	347,645	25
Hemlock	46,206	4,198	4,205	5,270	3,604	1,775	1,001	658	501	417	67,835	32
Other softwoods	0	0	0	0	0	0	0	0	0	0	0	-
Total softwoods	4,004,485	452,551	225,416	157,474	103,172	47,324	18,840	8,659	3,387	2,580	5,023,888	10
Sugar maple	1,782,970	48,433	10,566	10,027	8,100	4,806	3,908	2,202	1,504	2,123	1,874,639	15
Soft maples	1,376,707	113,474	33,608	19,342	12,496	7,189	2,656	1,385	610	730	1,568,197	12
Yellow birch	515,550	77,867	8,404	7,486	6,511	3,759	2,305	1,859	1,254	1,672	626,667	15
Paper birch	586,745	42,053	12,730	19,430	9,251	4,644	2,201	686	189	106	678,035	16
Gray birch	2,100	2,098	4,204	3,824	773	82	73	37	0	0	13,191	37
Beech	406,681	42,074	14,709	8,952	5,293	3,534	2,104	965	516	416	485,244	20
White ash	128,280	4,204	4,205	1,322	1,829	1,071	424	41	0	22	141,398	29
Black ash	33,587	14,714	4,202	1,648	1,025	513	344	37	0	0	56,070	33
Aspen	245,289	8,407	2,100	8,036	6,095	2,563	1,452	648	217	275	275,082	26
White oaks	0	0	0	0	0	0	0	0	0	0	0	-
Red oaks	29,462	0	0	440	72	238	0	42	0	48	30,302	84
Basswood	2,100	2,100	0	0	109	72	36	0	0	72	4,489	94
Elm	12,590	2,098	2,102	407	0	133	0	109	0	0	17,439	57
Other hardwoods	37,828	0	4,198	559	234	0	55	34	60	52	43,020	58
Noncomm. hardwoods	2,367,296	143,121	18,966	6,745	1,761	82	36	73	28	0	2,538,108	10
Total hardwoods	7,527,185	500,643	119,994	88,218	53,549	28,686	15,594	8,118	4,378	5,516	8,351,881	6
Total, all species	11,531,670	953,194	345,410	245,692	156,721	76,010	34,434	16,777	7,765	8,096	13,375,769	5.0
Sampling error of total (percent)	6	8	10	5	4	5	5	7	9	8	5.0	

[a] This is the seedling size class. The minimum size for seedlings is a total height of 1 foot.

Table 9.--Number of all live trees on timberland by species and diameter class, Washington County, Maine, 1982

Species	Diameter class (inches at breast height)										All classes	Sampling error of all classes
	Less than 1.0[a]	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17+		
	Thousand trees											Percent
Balsam fir	2,310,786	314,970	90,125	40,078	12,666	3,500	462	37	38	0	2,772,662	12
Tamarack	2,298	4,504	2,206	846	741	231	287	36	38	36	11,223	41
White spruce	8,779	0	10,997	6,284	2,751	1,169	164	75	0	23	30,242	36
Black spruce	84,176	18,109	22,106	6,272	1,194	357	138	0	0	0	132,352	47
Red spruce	538,618	81,293	37,329	28,927	17,673	9,251	4,515	1,805	617	506	720,534	19
Red pine	4,387	0	0	76	0	38	75	115	0	0	4,691	62
White pine	41,809	0	2,194	1,261	226	664	756	376	285	457	48,028	34
Northern white-cedar	149,321	30,743	28,578	13,573	7,631	4,842	1,948	901	231	96	237,864	25
Hemlock	131,942	26,390	22,010	9,442	6,416	4,213	2,232	891	343	186	204,065	29
Other softwoods	0	0	0	0	0	0	0	0	0	0	0	-
Total softwoods	3,272,116	476,009	215,545	106,759	49,298	24,265	10,577	4,236	1,552	1,304	4,161,661	11
Sugar maple	165,146	11,029	6,585	2,114	1,533	386	395	85	37	300	187,610	40
Soft maples	540,322	91,924	44,295	16,024	8,721	3,497	2,220	1,228	377	175	708,783	17
Yellow birch	432,437	13,173	6,573	2,402	1,858	1,049	520	303	163	316	458,794	37
Paper birch	390,924	26,392	17,739	10,897	5,860	1,641	897	340	75	0	454,765	21
Gray birch	100,477	42,660	11,001	1,928	277	0	0	0	0	0	156,343	33
Beech	174,001	68,338	21,982	4,344	1,968	961	481	464	151	118	272,808	31
White ash	24,133	0	0	150	487	216	93	38	66	0	25,183	44
Black ash	32,951	6,605	6,589	2,513	1,368	308	113	37	38	0	50,522	30
Aspen	436,141	40,595	24,753	8,347	2,403	1,459	1,326	709	309	209	516,251	43
White oaks	0	0	0	0	0	0	0	0	0	0	0	-
Red oaks	2,206	0	2,193	230	508	394	162	0	0	0	5,693	59
Basswood	0	0	0	0	0	0	0	0	0	0	0	-
Elm	0	0	0	0	0	0	0	0	0	0	0	-
Other hardwoods	20,487	2,298	0	0	0	0	0	0	0	0	22,785	50
Noncomm. hardwoods	684,354	17,727	11,030	642	211	0	0	0	0	0	713,964	25
Total hardwoods	3,003,579	320,741	152,740	49,591	25,194	9,911	6,207	3,204	1,216	1,118	3,573,501	13
Total, all species	6,275,695	796,750	368,285	156,350	74,492	34,176	16,784	7,440	2,768	2,422	7,735,162	8.0
Sampling error of total (percent)	10	10	10	6	5	6	8	10	13	15	8.0	

[a] This is the seedling size class. The minimum size for seedlings is a total height of 1 foot.

Table 10.--Number of all live trees on timberland by species and diameter class, Western Maine, 1982

Species	Diameter class (inches at breast height) Less than 1.0[a]	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17+	All classes	Sampling error of all classes
	Thousand trees											Percent
Balsam fir	2,159,238	264,136	65,680	54,538	28,633	11,757	4,975	1,386	247	24	2,590,614	11
Tamarack	0	0	4,297	74	0	139	0	0	0	0	4,510	95
White spruce	25,867	0	2,149	2,277	2,323	980	272	144	68	0	34,080	69
Black spruce	86,738	15,179	12,599	917	1,448	850	36	146	0	0	117,913	93
Red spruce	363,703	40,559	23,614	27,486	17,361	8,306	3,811	1,295	560	425	487,120	26
Red pine	0	0	0	278	148	74	74	121	170	44	909	44
White pine	51,415	17,152	2,169	8,966	6,312	4,193	2,598	2,108	1,032	1,262	97,207	21
Northern white-cedar	40,167	2,149	2,168	2,814	1,269	512	305	184	132	140	49,840	48
Hemlock	109,500	8,654	2,168	8,128	4,564	2,469	1,845	1,157	619	128	139,232	26
Other softwoods	0	0	0	70	0	80	0	0	0	0	150	71
Total softwoods	2,836,628	347,829	114,844	105,548	62,058	29,360	13,916	6,541	2,828	2,023	3,521,575	10
Sugar maple	1,163,405	82,280	19,090	8,216	6,229	3,328	1,984	976	400	385	1,286,293	18
Soft maples	1,101,110	131,200	31,559	30,583	16,793	8,510	4,123	1,601	646	633	1,326,758	11
Yellow birch	481,374	27,367	10,705	8,150	7,209	6,269	3,887	1,817	1,299	1,685	549,762	25
Paper birch	679,077	59,336	25,435	22,005	18,138	7,687	2,891	934	491	349	816,343	14
Gray birch	53,016	5,222	7,840	3,778	647	427	71	35	29	0	71,065	38
Beech	535,788	55,846	10,895	10,208	5,863	4,323	1,415	599	386	60	625,383	20
White ash	283,093	14,839	4,358	2,918	2,714	1,472	706	331	90	155	310,676	20
Black ash	20,628	6,211	0	481	260	139	54	0	0	30	27,803	51
Aspen	167,591	12,564	12,461	9,890	8,114	4,292	1,674	367	175	58	217,186	27
White oaks	62,844	0	0	761	74	0	0	0	0	21	63,700	70
Red oaks	167,034	10,782	2,169	4,131	1,770	1,038	565	336	199	119	188,143	54
Basswood	16,661	0	0	168	0	71	37	0	0	37	16,974	55
Elm	2,168	0	0	362	272	0	53	35	37	0	2,927	75
Other hardwoods	55,871	6,486	0	1,106	423	74	0	0	0	0	63,960	32
Noncomm. hardwoods	3,028,491	142,311	48,908	14,015	1,467	144	38	74	0	36	3,235,484	10
Total hardwoods	7,818,151	554,444	173,420	116,772	69,973	37,774	17,498	7,105	3,752	3,568	8,802,457	7
Total, all species	10,654,779	902,273	288,264	222,320	132,031	67,134	31,414	13,646	6,580	5,591	12,324,032	5.0
Sampling error of total (percent)	6	8	11	4	4	4	5	7	10	10	5.0	

[a] This is the seedling size class. The minimum size for seedlings is a total height of 1 foot.

Table 11.--Number of trees (5.0+ inches dbh) on timberland by species and tree class, Maine, 1982

Species	Tree class								Total	Sampling error of total
	Preferred	Acceptable	All growing stock	Rough cull	Rotten cull	All live	Salvable dead	Nonsalvable dead		
	Thousand trees									Percent
Balsam fir	214,357	489,213	703,570	73,415	39,327	816,312	106,836	105,348	1,028,496	3
Tamarack	5,466	9,666	15,132	2,568	1,048	18,748	1,039	1,430	21,217	16
White spruce	33,333	48,633	81,966	3,367	1,745	87,078	3,172	1,412	91,662	7
Black spruce	38,065	46,293	84,358	3,393	940	88,691	4,499	1,906	95,096	13
Red spruce	229,473	359,846	589,319	27,527	14,415	631,261	25,241	18,112	674,614	4
Red pine	2,502	2,960	5,462	800	52	6,314	82	75	6,471	32
White pine	28,066	95,653	123,719	18,680	3,575	145,974	1,949	12,072	159,995	6
Northern white-cedar	63,930	190,690	254,620	49,156	38,387	342,163	22,212	26,962	391,337	6
Hemlock	28,887	120,590	149,477	23,599	5,669	178,745	2,146	2,962	183,853	6
Other softwoods	86	1,074	1,160	385	29	1,574	132	340	2,046	27
Total softwoods	644,165	1,364,618	2,008,783	202,890	105,187	2,316,860	167,308	170,619	2,654,787	2
Sugar maple	26,083	96,328	122,411	18,694	12,160	153,265	2,360	4,391	160,016	6
Soft maples	31,197	252,914	284,111	56,257	37,518	377,886	5,134	14,628	397,648	3
Yellow birch	14,254	82,803	97,057	18,929	10,998	126,984	3,869	16,372	147,225	4
Paper birch	38,792	151,816	190,608	15,463	9,087	215,158	9,461	14,027	238,646	5
Gray birch	1,149	16,255	17,404	13,886	3,002	34,292	3,502	5,016	42,810	10
Beech	6,285	82,300	88,585	32,833	36,457	157,875	4,181	14,763	176,819	7
White ash	9,636	20,591	30,227	2,278	2,244	34,749	773	1,178	36,700	10
Black ash	2,791	14,464	17,255	7,268	4,192	28,715	4,559	4,061	37,335	13
Aspen	50,283	112,813	163,096	13,151	12,800	189,047	8,707	14,071	211,825	6
White oaks	213	2,909	3,122	1,156	283	4,561	29	14	4,604	25
Red oaks	10,053	38,381	48,434	3,430	1,037	52,901	401	638	53,940	8
Basswood	559	1,680	2,239	249	265	2,753	34	41	2,828	21
Elm	545	2,762	3,307	1,207	1,131	5,645	1,003	4,267	10,915	19
Other commercial hardwoods	666	5,998	6,664	3,370	448	10,482	757	942	12,181	14
Noncommercial hardwoods	-	-	-	37,359[a]	9,809	47,168	3,695	8,517	59,380	8
Total hardwoods	192,506	882,014	1,074,520	225,530	141,431	1,441,481	48,465	102,926	1,592,872	2
Total, all species	836,671	2,246,632	3,083,303	428,420	246,618	3,758,341	215,773	273,545	4,247,659	1.1
Sampling error of total (percent)	3	1	1	2	3	1	4	3	1.1	

[a] Includes 20,132,000 trees that, except for being noncommercial species, would qualify as growing-stock trees.

Table 12.--Number of trees (5.0+ inches dbh) on timberland by species and tree class, Aroostook County, Maine, 1982

Species	Tree class								Total	Sampling error of total
	Preferred	Acceptable	All growing stock	Rough cull	Rotten cull	All live	Salvable dead	Nonsalvable dead		
	-----	-----	-----	-----	Thousand trees	-----	-----	-----	-----	Percent
Balsam fir	105,458	122,115	227,573	13,304	11,164	252,041	38,655	18,717	309,413	14
Tamarack	2,446	1,605	4,051	690	529	5,270	363	118	5,751	27
White spruce	18,242	15,719	33,961	1,398	557	35,916	1,755	642	38,313	10
Black spruce	22,938	21,976	44,914	1,315	322	46,551	2,829	854	50,234	19
Red spruce	65,057	58,127	123,184	3,741	2,068	128,993	6,116	2,144	137,253	8
Red pine	0	0	0	0	0	0	0	0	0	-
White pine	1,280	1,945	3,225	237	59	3,521	103	648	4,272	25
Northern white-cedar	33,983	70,312	104,295	17,614	9,059	130,968	9,535	4,956	145,459	10
Hemlock	688	7,859	8,547	1,378	419	10,344	335	427	11,106	17
Other softwoods	0	58	58	0	0	58	0	0	58	100
Total softwoods	250,092	299,716	549,808	39,677	24,177	613,662	59,691	28,506	701,859	4
Sugar maple	9,150	26,948	36,098	7,787	3,505	47,390	754	1,128	49,272	11
Soft maples	5,234	23,385	28,619	7,844	4,637	41,100	1,032	1,400	43,532	10
Yellow birch	3,723	13,456	17,179	4,177	1,427	22,783	434	4,024	27,241	8
Paper birch	10,629	15,822	26,451	2,896	649	29,996	1,427	1,655	33,078	12
Gray birch	0	119	119	58	0	177	0	0	177	75
Beech	2,639	14,909	17,548	7,677	6,710	31,935	1,159	2,831	35,925	12
White ash	392	1,183	1,575	227	426	2,228	148	292	2,668	34
Black ash	1,145	3,843	4,988	1,417	868	7,273	2,184	1,006	10,463	24
Aspen	21,981	22,937	44,918	2,549	4,137	51,604	2,994	2,735	57,333	12
White oaks	0	0	0	0	0	0	0	0	0	-
Red oaks	0	70	70	0	0	70	0	0	70	100
Basswood	0	59	59	0	0	59	0	0	59	100
Elm	0	485	485	681	0	1,166	175	1,030	2,371	64
Other commercial hardwoods	0	37	37	118	0	155	188	0	343	60
Noncommercial hardwoods	-	-	-	4,137[a]	1,386	5,523	676	518	6,717	17
Total hardwoods	54,893	123,253	178,146	39,568	23,745	241,459	11,171	16,619	269,249	5
Total, all species	304,985	422,969	727,954	79,245	47,922	855,121	70,862	45,125	971,108	2.4
Sampling error of total (percent)	5	3	3	5	7	2	6	7	2.4	

[a] Includes 2,645,000 trees that, except for being noncommercial species, would qualify as growing-stock trees.

Table 13.--Number of trees (5.0+ inches dbh) on timberland by species and tree class, Capital Region, Maine, 1982

Species	Tree class								Total	Sampling error of total
	Preferred	Acceptable	All growing stock	Rough cull	Rotten cull	All live	Salvable dead	Nonsalvable dead		
	Thousand trees									Percent
Balsam fir	3,090	19,787	22,877	897	1,227	25,001	1,208	4,765	30,974	9
Tamarack	263	1,596	1,859	40	127	2,026	98	140	2,264	26
White spruce	296	1,755	2,051	138	184	2,373	28	28	2,429	31
Black spruce	46	93	139	0	29	168	0	0	168	52
Red spruce	2,614	18,072	20,686	611	648	21,945	366	928	23,239	16
Red pine	11	59	70	16	0	86	0	0	86	46
White pine	2,470	18,231	20,701	2,866	1,030	24,597	137	2,064	26,798	11
Northern white-cedar	542	7,180	7,722	1,080	1,517	10,319	658	938	11,915	20
Hemlock	1,663	12,646	14,309	1,776	465	16,550	17	213	16,780	15
Other softwoods	0	0	0	0	0	0	0	0	0	-
Total softwoods	10,995	79,419	90,414	7,424	5,227	103,065	2,512	9,076	114,653	5
Sugar maple	511	4,883	5,394	701	295	6,390	29	66	6,485	17
Soft maples	2,282	33,997	36,279	3,531	3,011	42,821	131	906	43,858	7
Yellow birch	306	2,815	3,121	729	248	4,098	15	305	4,418	16
Paper birch	1,975	12,564	14,539	1,104	352	15,995	291	717	17,003	10
Gray birch	0	2,459	2,459	4,861	452	7,772	522	786	9,080	16
Beech	359	4,345	4,704	1,126	2,459	8,289	15	74	8,378	17
White ash	1,030	3,276	4,306	144	139	4,589	93	0	4,682	16
Black ash	0	430	430	113	113	656	11	93	760	52
Aspen	1,931	14,411	16,342	891	1,114	18,347	627	1,125	20,099	13
White oaks	0	118	118	14	28	160	0	0	160	52
Red oaks	1,779	11,553	13,332	337	284	13,953	401	135	14,489	15
Basswood	0	521	521	113	46	680	0	0	680	44
Elm	45	341	386	100	311	797	273	868	1,938	26
Other commercial hardwoods	187	2,909	3,096	776	57	3,929	28	508	4,465	21
Noncommercial hardwoods	-	-	-	2,555[a]	557	3,112	27	550	3,689	20
Total hardwoods	10,405	94,622	105,027	17,095	9,466	131,588	2,463	6,133	140,184	4
Total, all species	21,400	174,041	195,441	24,519	14,693	234,653	4,975	15,209	254,837	2.8
Sampling error of total (percent)	11	4	3	7	8	3	12	8	2.8	

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[a] Includes 940,000 trees that, except for being noncommercial species, would qualify as growing-stock trees.

Table 14.--Number of trees (5.0+ inches dbh) on timberland by species and tree class, Casco Bay, Maine, 1982

Species	Tree class								Total	Sampling error of total
	Preferred	Acceptable	All growing stock	Rough cull	Rotten cull	All live	Salvable dead	Nonsalvable dead		
	Thousand trees									Percent
Balsam fir	1,274	5,958	7,232	889	224	8,345	564	1,951	10,860	18
Tamarack	14	426	440	14	0	454	0	50	504	60
White spruce	0	142	142	0	0	142	0	0	142	82
Black spruce	173	248	421	0	0	421	29	0	450	79
Red spruce	841	2,220	3,061	531	35	3,627	483	595	4,705	24
Red pine	406	745	1,151	84	0	1,235	0	0	1,235	41
White pine	9,646	33,037	42,683	10,642	1,020	54,345	578	3,312	58,235	7
Northern white-cedar	0	807	807	107	15	929	57	28	1,014	99
Hemlock	4,980	19,014	23,994	4,166	651	28,811	335	700	29,846	11
Other softwoods	86	946	1,032	305	29	1,366	132	340	1,838	29
Total softwoods	17,420	63,543	80,963	16,738	1,974	99,675	2,178	6,976	108,829	5
Sugar maple	479	1,766	2,245	316	278	2,839	0	73	2,912	22
Soft maples	2,532	34,238	36,770	8,182	4,287	49,239	290	1,021	50,550	7
Yellow birch	410	1,885	2,295	530	331	3,156	15	58	3,229	18
Paper birch	2,670	8,367	11,037	438	260	11,735	57	143	11,935	11
Gray birch	0	2,207	2,207	1,880	415	4,502	256	516	5,274	17
Beech	341	4,521	4,862	1,595	701	7,158	0	230	7,388	16
White ash	1,072	3,191	4,263	245	166	4,674	0	116	4,790	17
Black ash	0	173	173	136	69	378	29	178	585	37
Aspen	1,260	10,171	11,431	1,028	756	13,215	394	844	14,453	16
White oaks	213	1,841	2,054	605	234	2,893	29	14	2,936	20
Red oaks	5,321	19,394	24,715	1,657	573	26,945	0	245	27,190	10
Basswood	0	99	99	69	0	168	0	41	209	56
Elm	0	227	227	58	61	346	28	632	1,006	35
Other commercial hardwoods	188	1,101	1,289	556	255	2,100	143	131	2,374	26
Noncommercial hardwoods	-	-	-	1,007[a]	274	1,281	91	43	1,415	26
Total hardwoods	14,486	89,181	103,667	18,302	8,660	130,629	1,332	4,285	136,246	4
Total, all species	31,906	152,724	184,630	35,040	10,634	230,304	3,510	11,261	245,075	2.9
Sampling error of total (percent)	7	3	3	6	9	3	14	9	2.9	

[a] Includes 734,000 trees that, except for being noncommercial species, would qualify as growing-stock trees.

Table 15.--Number of trees (5.0+ inches dbh) on timberland by species and tree class, Hancock County, Maine, 1982

Species	Tree class								Total	Sampling error of total
	Preferred	Acceptable	All growing stock	Rough cull	Rotten cull	All live	Salvable dead	Nonsalvable dead		
	----------	----------	----------	----------	Thousand trees	----------	----------	----------	----------	Percent
Balsam fir	7,063	15,871	22,934	4,436	834	28,204	2,582	8,732	39,518	15
Tamarack	101	659	760	243	0	1,003	166	69	1,238	60
White spruce	669	676	1,345	34	0	1,379	0	0	1,379	38
Black spruce	1,019	2,124	3,143	240	0	3,383	138	69	3,590	39
Red spruce	12,532	21,901	34,433	2,907	122	37,462	241	1,599	39,302	15
Red pine	274	119	393	33	0	426	82	0	508	56
White pine	1,230	3,017	4,247	459	148	4,854	19	549	5,422	28
Northern white-cedar	2,336	8,516	10,852	2,922	1,354	15,128	204	2,041	17,373	25
Hemlock	846	8,002	8,848	2,174	134	11,156	200	33	11,389	24
Other softwoods	0	0	0	0	0	0	0	0	0	-
Total softwoods	26,070	60,885	86,955	13,448	2,592	102,995	3,632	13,092	119,719	8
Sugar maple	335	1,054	1,389	481	180	2,050	69	66	2,185	45
Soft maples	1,232	14,881	16,113	6,089	1,570	23,772	430	1,086	25,288	13
Yellow birch	98	3,122	3,220	1,518	732	5,470	139	377	5,986	27
Paper birch	1,604	10,362	11,966	1,568	1,346	14,880	1,147	1,006	17,033	29
Gray birch	0	882	882	873	0	1,755	271	617	2,643	40
Beech	0	859	859	2,896	1,216	4,971	159	1,843	6,973	36
White ash	513	804	1,317	187	76	1,580	0	0	1,580	45
Black ash	35	629	664	146	69	879	0	0	879	77
Aspen	1,240	6,091	7,331	770	741	8,842	637	890	10,369	27
White oaks	0	0	0	0	0	0	0	0	0	-
Red oaks	79	373	452	361	0	813	0	0	813	56
Basswood	0	0	0	0	0	0	0	0	0	-
Elm	0	0	0	0	0	0	0	0	0	-
Other commercial hardwoods	0	0	0	266	66	332	33	199	564	70
Noncommercial hardwoods	-	-	-	750[a]	412	1,162	0	848	2,010	34
Total hardwoods	5,136	39,057	44,193	15,905	6,408	66,506	2,885	6,932	76,323	10
Total, all species	31,206	99,942	131,148	29,353	9,000	169,501	6,517	20,024	196,042	5.6
Sampling error of total (percent)	11	7	6	10	13	6	18	14	5.6	

[a] Includes 274,000 trees that, except for being noncommercial species, would qualify as growing-stock trees.

Table 16.--Number of trees (5.0+ inches dbh) on timberland by species and tree class, Penobscot County, Maine, 1982

Species	Tree class								Total	Sampling error of total
	Preferred	Acceptable	All growing stock	Rough cull	Rotten cull	All live	Salvable dead	Nonsalvable dead		
	Thousand trees									Percent
Balsam fir	10,807	40,995	51,802	7,977	4,474	64,253	13,935	12,881	91,069	8
Tamarack	1,183	1,734	2,917	1,109	67	4,093	0	409	4,502	41
White spruce	1,906	3,437	5,343	432	66	5,841	268	34	6,143	18
Black spruce	925	2,050	2,975	0	0	2,975	67	100	3,142	45
Red spruce	18,878	38,458	57,336	3,461	654	61,451	3,211	2,612	67,274	10
Red pine	955	431	1,386	117	15	1,518	0	0	1,518	62
White pine	1,925	6,397	8,322	1,540	154	10,016	134	1,843	11,993	23
Northern white-cedar	10,155	42,212	52,367	12,379	8,222	72,968	2,345	6,715	82,028	11
Hemlock	7,730	30,598	38,328	6,519	873	45,720	67	575	46,362	13
Other softwoods	0	0	0	0	0	0	0	0	0	-
Total softwoods	54,464	166,312	220,776	33,534	14,525	268,835	20,027	25,169	314,031	5
Sugar maple	1,993	9,343	11,336	2,549	1,276	15,161	483	742	16,386	20
Soft maples	3,345	24,726	28,071	9,137	5,214	42,422	468	1,830	44,720	11
Yellow birch	1,202	7,369	8,571	2,856	820	12,247	299	1,007	13,553	14
Paper birch	1,960	11,301	13,261	2,321	310	15,892	490	751	17,133	18
Gray birch	634	2,586	3,220	3,552	586	7,358	1,109	1,123	9,590	26
Beech	678	16,419	17,097	7,210	5,000	29,307	999	2,607	32,913	17
White ash	1,146	2,752	3,898	704	301	4,903	233	290	5,426	29
Black ash	0	2,576	2,576	2,916	989	6,481	1,414	1,278	9,173	29
Aspen	5,590	14,241	19,831	3,896	1,723	25,450	1,080	2,006	28,536	18
White oaks	0	522	522	130	0	652	0	0	652	100
Red oaks	143	234	377	285	33	695	0	101	796	52
Basswood	65	649	714	67	0	781	34	0	815	46
Elm	185	704	889	315	524	1,728	100	833	2,661	33
Other commercial hardwoods	0	470	470	695	0	1,165	0	34	1,199	71
Noncommercial hardwoods	-	-	-	2,834[a]	532	3,366	211	334	3,911	26
Total hardwoods	16,941	93,892	110,833	39,467	17,308	167,608	6,920	12,936	187,464	6
Total, all species	71,405	260,204	331,609	73,001	31,833	436,443	26,947	38,105	501,495	3.3
Sampling error of total (percent)	9	4	4	6	8	3	10	9	3.3	

[a] Includes 1,941,000 trees that, except for being noncommercial species, would qualify as growing-stock trees.

Table 17.--Number of trees (5.0+ inches dbh) on timberland by species and tree class, Piscataquis County, Maine, 1982

Species	Tree class								Total	Sampling error of total
	Preferred	Acceptable	All growing stock	Rough cull	Rotten cull	All live	Salvable dead	Nonsalvable dead		
	----------------	----------------	----------------	----------------	Thousand trees	----------------	----------------	----------------	----------------	Percent
Balsam fir	40,760	74,280	115,040	5,689	9,336	130,065	17,820	11,924	159,809	7
Tamarack	769	1,816	2,585	322	0	2,907	302	284	3,493	47
White spruce	4,635	7,605	12,240	268	74	12,582	497	382	13,461	19
Black spruce	4,781	5,166	9,947	802	292	11,041	376	324	11,741	27
Red spruce	62,063	78,079	140,142	2,823	5,688	148,653	5,846	3,003	157,502	10
Red pine	0	0	0	0	0	0	0	0	0	-
White pine	2,588	5,797	8,385	209	25	8,619	387	502	9,508	23
Northern white-cedar	7,736	20,445	28,181	6,167	8,410	42,758	5,016	4,289	52,063	14
Hemlock	4,131	4,412	8,543	827	934	10,304	177	208	10,689	26
Other softwoods	0	0	0	0	0	0	0	0	0	-
Total softwoods	127,463	197,600	325,063	17,107	24,759	366,929	30,421	20,916	418,266	6
Sugar maple	5,378	11,552	16,930	1,307	2,163	20,400	37	903	21,340	15
Soft maples	6,268	25,136	31,404	3,281	4,307	38,992	732	1,973	41,697	12
Yellow birch	3,383	10,425	13,808	1,720	1,929	17,457	641	3,435	21,533	9
Paper birch	3,539	12,276	15,815	1,041	1,091	17,947	1,698	1,886	21,531	14
Gray birch	147	527	674	73	0	747	406	267	1,420	44
Beech	969	11,119	12,088	2,752	8,253	23,093	601	1,559	25,253	17
White ash	1,253	1,307	2,560	0	70	2,630	153	45	2,828	31
Black ash	920	2,596	3,516	188	436	4,140	415	636	5,191	32
Aspen	4,367	7,670	12,037	91	843	12,971	959	2,068	15,998	25
White oaks	0	0	0	0	0	0	0	0	0	-
Red oaks	73	60	133	0	0	133	0	0	133	78
Basswood	315	74	389	0	74	463	0	0	463	51
Elm	0	73	73	0	128	201	37	0	238	64
Other commercial hardwoods	60	0	60	143	0	203	0	0	203	77
Noncommercial hardwoods	-	-	-	5,142[a]	2,228	7,370	319	1,816	9,505	24
Total hardwoods	26,672	82,815	109,487	15,738	21,522	146,747	5,998	14,588	167,333	7
Total, all species	154,135	280,415	434,550	32,845	46,281	513,676	36,419	35,504	585,599	3.6
Sampling error of total (percent)	7	5	4	10	9	4	10	8	3.6	

[a] Includes 3,770,000 trees that, except for being noncommercial species, would qualify as growing-stock trees.

Table 18.--Number of trees (5.0+ inches dbh) on timberland by species and tree class, Somerset County, Maine, 1982

Species	Tree class								Total	Sampling error of total
	Preferred	Acceptable	All growing stock	Rough cull	Rotten cull	All live	Salvable dead	Nonsalvable dead		
	Thousand trees									Percent
Balsam fir	29,650	105,184	134,834	10,328	4,898	150,060	16,660	8,543	175,263	7
Tamarack	216	351	567	0	0	567	72	360	999	67
White spruce	3,677	8,077	11,754	490	72	12,316	74	252	12,642	17
Black spruce	4,201	8,305	12,506	216	72	12,794	714	108	13,616	37
Red spruce	38,119	63,088	101,207	4,194	1,192	106,593	3,813	1,599	112,005	11
Red pine	36	1,288	1,324	513	0	1,837	0	0	1,837	90
White pine	2,207	6,642	8,849	216	461	9,526	151	580	10,257	33
Northern white-cedar	3,542	22,719	26,261	5,145	3,110	34,516	3,190	3,149	40,855	15
Hemlock	2,785	9,308	12,093	888	246	13,227	306	72	13,605	25
Other softwoods	0	0	0	0	0	0	0	0	0	-
Total softwoods	84,433	224,962	309,395	21,990	10,051	341,436	24,980	14,663	381,079	6
Sugar maple	5,012	22,500	27,512	2,818	2,339	32,669	639	919	34,227	14
Soft maples	3,646	31,288	34,934	6,084	3,391	44,409	1,324	1,428	47,161	11
Yellow birch	2,960	17,279	20,239	3,133	1,473	24,845	1,254	3,449	29,548	10
Paper birch	4,930	28,479	33,409	1,871	1,228	36,508	1,561	3,045	41,114	14
Gray birch	72	3,444	3,516	1,092	180	4,788	288	72	5,148	31
Beech	598	11,647	12,245	3,417	6,118	21,780	690	1,943	24,413	19
White ash	845	3,215	4,060	144	505	4,709	72	182	4,963	41
Black ash	431	2,137	2,568	505	494	3,567	0	362	3,929	41
Aspen	3,848	13,989	17,837	942	507	19,286	840	1,358	21,484	23
White oaks	0	0	0	0	0	0	0	0	0	-
Red oaks	186	654	840	0	0	840	0	0	840	65
Basswood	72	72	144	0	145	289	0	0	289	53
Elm	96	553	649	0	0	649	181	468	1,298	48
Other commercial hardwoods	162	614	776	219	0	995	0	0	995	47
Noncommercial hardwoods	-	-	-	7,165[a]	1,560	8,725	951	1,191	10,867	22
Total hardwoods	22,858	135,871	158,729	27,390	17,940	204,059	7,800	14,417	226,276	6
Total, all species	107,291	360,833	468,124	49,380	27,991	545,495	32,780	29,080	607,355	3.1
Sampling error of total (percent)	8	4	8	8	10	3	9	8	3.1	

[a] Includes 2,932,000 trees that, except for being noncommercial species, would qualify as growing-stock trees.

Table 19.--Number of trees (5.0+ inches dbh) on timberland by species and tree class, Washington County, Maine, 1982

Species	Tree class								Total	Sampling error of total
	Preferred	Acceptable	All growing stock	Rough cull	Rotten cull	All live	Salvable dead	Nonsalvable dead		
	Thousand trees									Percent
Balsam fir	5,916	26,689	32,605	21,312	2,865	56,782	8,182	21,265	86,229	11
Tamarack	474	1,266	1,740	150	325	2,215	38	0	2,253	54
White spruce	3,592	5,835	9,427	394	644	10,465	163	0	10,628	29
Black spruce	3,537	3,642	7,179	631	150	7,960	76	451	8,487	54
Red spruce	24,051	30,690	54,741	5,704	2,849	63,294	1,872	2,816	67,982	12
Red pine	228	38	266	37	0	303	0	0	303	64
White pine	1,129	2,335	3,464	364	197	4,025	77	1,078	5,180	26
Northern white-cedar	5,599	15,700	21,299	2,847	5,076	29,222	913	3,860	33,995	18
Hemlock	3,814	14,931	18,745	3,596	1,382	23,723	338	694	24,755	17
Other softwoods	0	0	0	0	0	0	0	0	0	-
Total softwoods	48,340	101,126	149,466	35,035	13,488	197,989	11,659	30,164	239,812	6
Sugar maple	699	2,964	3,663	557	629	4,849	283	38	5,170	22
Soft maples	3,597	20,526	24,123	4,112	4,007	32,242	75	2,818	35,135	13
Yellow birch	889	3,502	4,391	904	1,316	6,611	254	630	7,495	21
Paper birch	4,475	13,177	17,652	1,284	774	19,710	1,612	1,511	22,833	16
Gray birch	75	805	880	527	798	2,205	376	455	3,036	34
Beech	0	3,739	3,739	1,323	3,426	8,488	442	3,206	12,136	26
White ash	261	362	623	296	131	1,050	0	75	1,125	43
Black ash	76	1,399	1,475	1,817	1,085	4,377	506	508	5,391	31
Aspen	4,214	7,521	11,735	1,455	1,573	14,763	609	1,948	17,320	26
White oaks	0	0	0	0	0	0	0	0	0	-
Red oaks	734	560	1,294	0	0	1,294	0	157	1,451	87
Basswood	0	0	0	0	0	0	0	0	0	-
Elm	0	0	0	0	0	0	0	0	0	-
Other commercial hardwoods	0	0	0	0	0	0	0	0	0	-
Noncommercial hardwoods	-	-	-	854[a]	0	854	75	152	1,081	41
Total hardwoods	15,020	54,555	69,575	13,129	13,739	96,443	4,232	11,498	112,173	8
Total, all species	63,360	155,681	219,041	48,164	27,227	294,432	15,891	41,662	351,985	4.1
Sampling error of total (percent)	10	5	5	9	10	4	13	9	4.1	

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[a] Includes 377,000 trees that, except for being noncommercial species, would qualify as growing-stock trees.

Table 20.--Number of trees (5.0+ inches dbh) on timberland by species and tree class, Western Maine, 1982

Species	Tree class								Total	Sampling error of total
	Preferred	Acceptable	All growing stock	Rough cull	Rotten cull	All live	Salvable dead	Nonsalvable dead		
	----------	----------	----------	----------	Thousand trees	----------	----------	----------	----------	Percent
Balsam fir	10,339	78,334	88,673	8,583	4,305	101,561	7,230	16,570	125,361	9
Tamarack	0	213	213	0	0	213	0	0	213	52
White spruce	316	5,387	5,703	213	148	6,064	387	74	6,525	37
Black spruce	445	2,689	3,134	189	75	3,398	270	0	3,668	46
Red spruce	5,318	49,211	54,529	3,555	1,159	59,243	3,293	2,816	65,352	12
Red pine	592	280	872	0	37	909	0	75	984	46
White pine	5,591	18,252	23,843	2,147	481	26,471	363	1,496	28,330	22
Northern white-cedar	37	2,799	2,836	895	1,624	5,355	294	986	6,635	27
Hemlock	2,250	13,820	16,070	2,275	565	18,910	371	40	19,321	25
Other softwoods	0	70	70	80	0	150	0	0	150	71
Total softwoods	24,888	171,055	195,943	17,937	8,394	222,274	12,208	22,057	256,539	7
Sugar maple	2,526	15,318	17,844	2,178	1,495	21,517	66	456	22,039	15
Soft maples	3,061	44,737	47,798	7,997	7,094	62,889	652	2,166	65,707	9
Yellow birch	1,283	22,950	24,233	3,362	2,722	30,317	818	3,087	34,222	10
Paper birch	7,010	39,468	46,478	2,940	3,077	52,495	1,178	3,313	56,986	9
Gray birch	221	3,226	3,447	970	571	4,988	274	1,180	6,442	24
Beech	701	14,742	15,443	4,837	2,574	22,854	116	470	23,440	19
White ash	3,124	4,501	7,625	331	430	8,386	74	178	8,638	24
Black ash	184	681	865	30	69	964	0	0	964	51
Aspen	5,852	15,782	21,634	1,529	1,406	24,569	567	1,097	26,233	18
White oaks	0	428	428	407	21	856	0	0	856	89
Red oaks	1,738	5,483	7,221	790	147	8,158	0	0	8,158	25
Basswood	107	206	313	0	0	313	0	0	313	65
Elm	219	379	598	53	107	758	209	436	1,403	42
Other commercial hardwoods	69	867	936	597	70	1,603	365	70	2,038	38
Noncommercial hardwoods	-	-	-	12,915[a]	2,860	15,775	1,345	3,065	20,185	15
Total hardwoods	26,095	168,768	194,863	38,936	22,643	256,442	5,664	15,518	277,624	4
Total, all species	50,983	339,823	390,806	56,873	31,037	478,716	17,872	37,575	534,163	2.8
Sampling error of total (percent)	9	4	3	7	8	3	11	8	2.8	

[a] Includes 6,519,000 trees that, except for being noncommercial species, would qualify as growing-stock trees.

Table 21.--Average number of trees (5.0+ inches dbh) per acre of timberland by geographic unit and tree class, Maine, 1982

Geographic unit	Tree class								Total
	Preferred	Acceptable	All growing stock	Rough cull	Rotten cull	All live	Salvable dead	Nonsalvable dead	
Aroostook	80	112	192	21	12	225	19	12	256
Capital Region	19	151	170	21	13	204	4	13	221
Casco Bay	28	133	161	30	9	200	3	10	213
Hancock	38	124	162	37	11	210	8	25	243
Piscataquis	68	125	193	15	20	228	16	16	260
Penobscot	38	139	177	39	17	233	14	20	267
Somerset	46	154	200	21	12	233	14	12	259
Washington	42	104	146	32	18	196	11	28	235
Western Maine	23	154	177	26	14	217	8	17	242
All units	48	131	179	25	14	218	13	16	247

Table 22.--Average number of growing-stock trees (5.0+ inches dbh) per acre of timberland by species and geographic unit, Maine, 1982

Species	Aroostook	Capital Region	Casco Bay	Hancock	Penobscot	Piscataquis	Somerset	Washington	Western Maine	Total
Balsam fir	60	19	6	28	28	51	58	22	40	41
Tamarack	1	2	0	1	1	1	0	1	0	1
White spruce	9	2	0	2	3	5	5	6	3	5
Black spruce	12	0	0	4	2	4	5	5	2	5
Red spruce	32	17	3	43	31	62	43	37	25	34
Red pine	0	0	1	0	1	0	1	0	0	0
White pine	1	18	34	5	4	4	4	2	11	7
Northern white-cedar	28	7	1	13	28	13	11	14	1	15
Hemlock	2	12	19	11	20	4	5	13	7	9
Other softwoods	0	0	1	0	0	0	0	0	0	0
Total softwoods	145	77	65	107	118	144	132	100	89	117
Sugar maple	9	5	2	2	6	8	12	2	8	7
Soft maples	8	31	29	20	15	14	15	16	22	17
Yellow birch	5	3	2	4	5	6	9	3	11	6
Paper birch	7	12	9	15	7	7	14	12	21	11
Gray birch	0	2	2	1	2	0	2	1	2	1
Beech	5	4	4	1	9	6	5	2	7	5
White ash	0	4	3	2	2	1	2	0	4	2
Black asn	1	0	0	1	1	2	1	1	0	1
Aspen	12	14	9	9	11	5	8	8	10	9
White oaks	0	0	2	0	0	0	0	0	0	0
Red oaks	0	11	20	0	0	0	0	1	3	3
Basswood	0	0	0	0	0	0	0	0	0	0
Elm	0	0	0	0	1	0	0	0	0	0
Other hardwoods	0	3	1	0	0	0	0	0	0	0
Total hardwoods	47	89	83	55	59	49	68	46	88	62
Total, all species	192	166	148	162	177	193	200	146	177	179

Table 23.--Average diameter at breast height of growing-stock trees (5.0+ inches dbh) on timberland by species and geographic unit, Maine, 1982

Species	Aroostook	Capital Region	Casco Bay	Hancock	Penobscot	Piscataquis	Somerset	Washington	Western Maine	Total
Balsam fir	7.4	6.7	7.2	6.6	6.9	7.4	7.5	6.9	7.6	7.3
Tamarack	9.3	9.2	8.2	9.1	7.7	7.3	8.0	8.7	8.6	8.5
White spruce	8.0	7.9	6.6	7.4	7.6	7.8	7.3	7.2	8.1	7.7
Black spruce	6.9	7.3	6.2	7.1	7.0	8.0	6.9	6.6	8.4	7.1
Red spruce	8.4	8.2	8.4	8.5	8.3	8.0	8.0	8.1	8.0	8.2
Red pine	.0	12.7	9.6	11.8	10.8	.0	9.0	10.9	10.5	10.2
White pine	10.6	10.1	10.1	10.2	10.9	10.7	9.9	11.5	9.5	10.1
Northern white-cedar	8.6	7.4	7.2	8.3	7.8	9.8	9.5	8.0	8.7	8.6
Hemlock	9.7	9.2	9.6	9.1	8.6	8.6	8.8	8.7	8.7	9.0
Other softwoods	8.0	.0	10.0	.0	.0	.0	.0	.0	6.0	9.6
Softwoods	7.9	8.4	9.5	8.1	8.0	8.0	7.9	7.9	8.1	8.1
Sugar maple	9.5	7.7	7.9	8.4	9.1	10.2	9.6	8.6	8.6	9.3
Soft maples	7.9	7.8	7.6	7.7	8.1	8.3	8.2	7.9	7.9	8.0
Yellow birch	9.4	8.1	7.6	7.9	8.3	9.8	9.5	8.1	9.9	9.3
Paper birch	7.3	7.5	7.4	7.3	8.0	7.7	7.6	7.4	7.9	7.6
Gray birch	6.0	6.5	6.7	6.4	6.4	6.7	6.6	6.5	7.0	6.6
Beech	9.3	7.6	7.8	7.4	7.6	8.3	8.1	7.8	8.0	8.2
White ash	8.9	8.1	7.3	8.5	8.6	8.6	8.5	8.8	8.6	8.4
Black ash	8.6	6.4	6.3	7.5	8.1	7.8	7.7	8.1	7.3	8.0
Aspen	8.5	7.7	7.6	8.1	9.0	9.5	8.2	8.2	8.0	8.3
White oaks	.0	7.0	8.1	.0	6.8	.0	.0	.0	6.3	7.6
Red oaks	12.9	8.8	8.3	9.9	11.1	19.4	8.8	8.8	8.2	8.5
Basswood	6.0	8.8	7.7	.0	10.2	9.9	12.5	.0	9.3	9.6
Elm	8.9	7.8	7.5	.0	13.2	10.0	8.2	.0	7.6	9.5
Other hardwoods	12.0	7.7	7.5	.0	7.8	12.0	7.0	.0	6.9	7.5
Hardwoods	8.6	7.8	7.7	7.7	8.3	8.8	8.4	7.9	8.3	8.3
All species	8.1	8.1	8.5	7.9	8.1	8.2	8.1	7.9	8.2	8.1

Powell, Douglas S. Forest composition of Maine: An analysis using number of trees. Resour. Bull. NE-85. Broomall, PA: U.S. Deparmtnet of Agriculture, Forest Service, Northeastern Forest Experiment Station; 1985. 40 p.

Number-of-trees data compiled by the USDA Forest Service from three periodic statewide inventories of Maine's forest resources are used to analyze the composition of the state's timberland in terms of species, tree class, and size. Conditions are compared and contrasted for periods from 1959 to 1974 to 1982 across different regions and counties of the state. Twenty-three statistical tables containing 1982 estimates of number of trees, trees per acre, and average diameter are presented.

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